

Technics

ORGAN



SX-F100

SX-G100W



WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

BEFORE YOU PLAY, PLEASE READ THE CAUTION-ARY COPY APPEARING ON PAGE 2.

	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	
<p>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE SCREWS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>		



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The model number of this product is found on the rear of the unit.

The model number and serial number are found underneath the keyboard.

Please note the model and serial numbers in the space provided below and retain this sheet as a permanent record of your purchase to aid identification in the event of theft.

MODEL NUMBER _____

SERIAL NUMBER _____

Technics

OWNER'S MANUAL

Before you play

For long and pleasurable use of this instrument, and to gain a thorough understanding of your F100 organ, it is strongly recommended that you read through this Owner's Manual once.

The Owner's Manual is comprised of the following parts.

BASIC FUNCTIONS

This part includes an explanation of basic procedures and points you should be aware of for proper operation of your instrument.

PRACTICAL APPLICATIONS

This part comprises a detailed explanation of sound, effect, rhythm, **SEQUENCER**, **COMPOSER**, Disk Drive and MIDI.

REFERENCE GUIDE (separate booklet)

Reference guide for the contents of the **SOUND GROUP** and **RHYTHM GROUP** etc.

Important Safety Instructions

WARNING

When using electric products, basic precautions should always be followed, including the following;

- Read all the instructions before using the product.

Safety

- **Power Source**—The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
- **Polarization**—This product may be equipped with a polarized line plug (one blade wider than the other). This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician to replace your obsolete outlet. Do not defeat the safety purpose of the plug.
- **Periods of Non-use**—The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time.

Installation

- **Water and Moisture**—Do not use this product near water—for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
- **Cart/Stand**—This product should be used only with a cart or stand that is recommended by the manufacturer.
- **Ventilation**—The product should be located so that its location or position does not interfere with its proper ventilation.
- **Heat**—The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
- **Foreign Material**—Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

Listening caution

This product, either alone or in combination with an amplifier and headphones or speakers may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.

Service

- **Damage Requiring Service**—The product should be serviced by qualified service personnel when:
 - a. The power-supply cord or the plug has been damaged; or
 - b. Objects have fallen, or liquid has been spilled onto the product; or
 - c. The product has been exposed to rain; or
 - d. The product does not appear to operate normally or exhibits a marked change in performance; or
 - e. The product has been dropped, or the enclosure damaged.
- **Servicing**—Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

Maintenance

- Be sure to switch this unit off after use, and do not switch the unit on and off in quick succession, as this places an undue load on the electronic components.
- To maintain the luster of the keys and buttons, wipe with a clean, damp cloth, and polish with a soft, dry cloth. Polish may be used, but do not use thinners or petro-chemical-based polishes.
- A wax-based polish may be used on the cabinet, although you will find that rubbing with a soft cloth will suffice.

SAVE THESE INSTRUCTIONS

Contents

Before you play	1
Important Safety Instructions	2
Controls and functions	6
BASIC FUNCTIONS	
Getting started	8
Listen to the demonstration.	10
Selecting sounds: upper and lower keyboards	12
Selecting sounds: pedal keyboard	15
Effects	16
Playing automatic rhythms	18
Automatic accompaniment	21
Record your performance	23
Easy Play Style	25
PRACTICAL APPLICATIONS	
About the display	29
Part I Sounds and effects	33
Parts	33
Orchestral Conductor	33
Selecting a type of organ	34
Setting the Organ sound: Manual	36
Setting the Organ sound: Preset	40
Selecting Sound part sounds	41
Selecting the bass part sound	42
Add effects to the Sound and Bass part sounds	44
Other effects	47
Automatic sound and effect settings	48
Transpose	50
Techni-chord	51
BGS Background Sound	52
Panel Memory	53
Part II Playing the rhythm	54
Selecting rhythms	54
Playing the rhythm	56
Keyboard Percussion	58
Auto Play Chord	59
Automatic settings	63
Music Style Arranger	65

Part III Sequencer	67
Outline of the Sequencer	67
Easy Record	69
Sequencer parts	70
Realtime Record	72
Step Record	74
Track Assign	79
Other recording settings you can adjust	80
Editing the recorded performance	82
Punch record	89
Playback from a specific measure	91
Sequencer Medley	92
Part IV Composer	93
Outline of the Composer	93
Setting up to create a rhythm pattern	95
Record your rhythm pattern	99
Step Record	100
Composer Mode	102
Part V Disk Drive	103
Loading data	105
Formatting a disk	106
Saving data	107
Single data type load	109
Part VI Adjusting the sounds	111
Sound mode	111
Sound setting	113
Part VII Adjusting the functions	123
Outline of procedure	123
Touch functions	124
Control functions	125
Part VIII Creating sounds	128
Outline of the Sound Edit	128
Easy Edit	130
General Edit	131
Tone Edit	135
Effect Edit	139
Store the new sound	140

Part IX MIDI	142
What is MIDI?	142
Outline of MIDI functions	144
Setting the functions	145
Initialize	154
Connections	155
Assembly	156
Disassembly	157
Symptoms which appear to be signs of trouble	158
Error messages	160
Index	161
Specifications	163

Controls and functions

BASS PEDALS

Select the sounds to be played on the pedal keyboard. (Refer to page 42.)

UPPER ORGAN

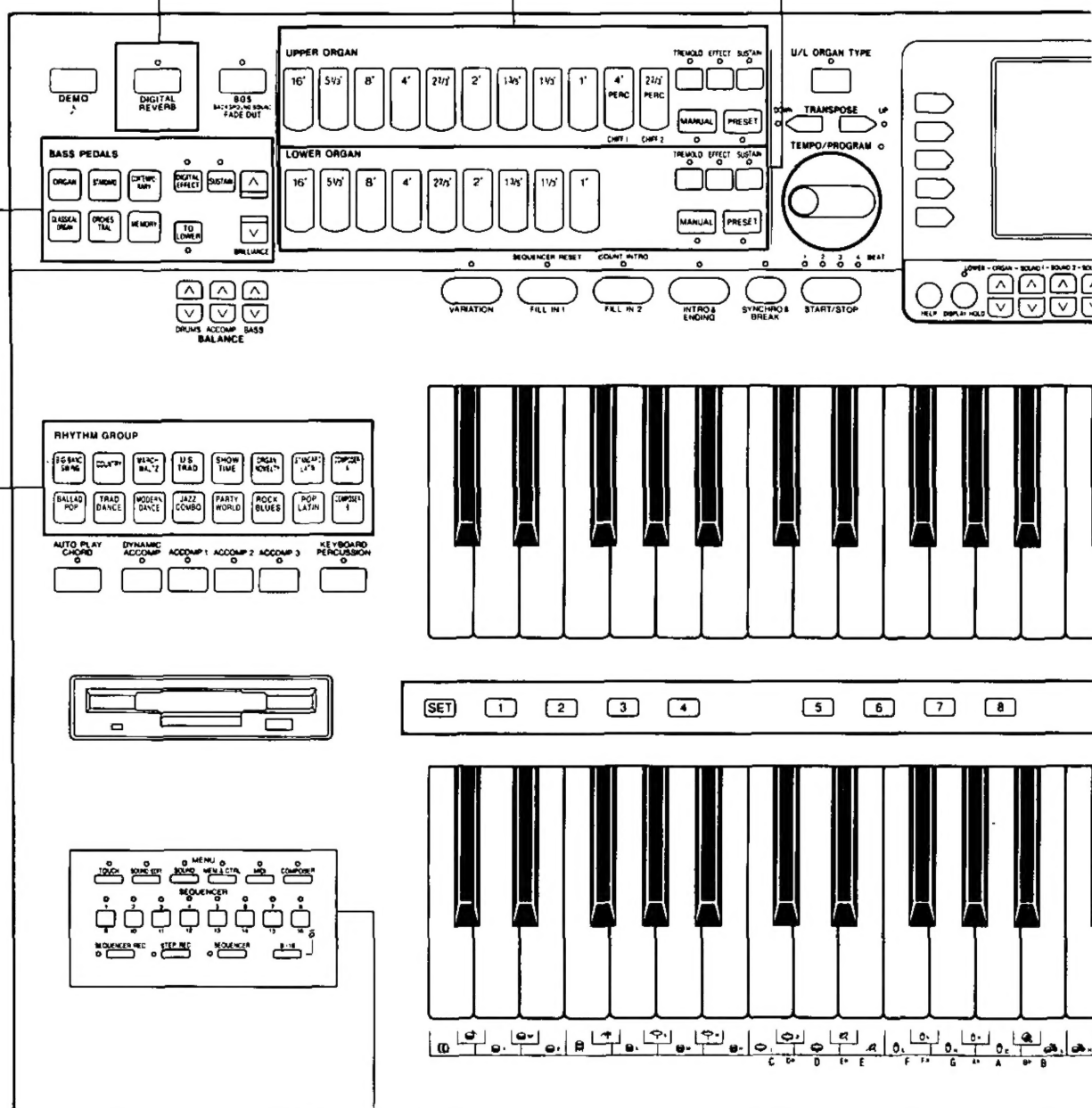
Select the organ sounds to be played on the upper keyboard. (Refer to page 36.)

DIGITAL REVERB

Add reverberation to the sound. (Refer to page 47.)

LOWER ORGAN

Select the organ sounds to be played on the lower keyboard. (Refer to page 36.)



RHYTHM GROUP

Various rhythm patterns are available for each rhythm group. (Refer to page 54.)

PROGRAM SECTION

Several buttons are located beneath the cover. These buttons are used when setting the functions for the **SEQUENCER**, **COMPOSER** or **MIDI**, and when custom-setting any of the programmable functions.

UPPER ORCHESTRAL CONDUCTOR

Select the part to be played on the upper keyboard. (Refer to page 33.)

UPPER SOUND GROUP

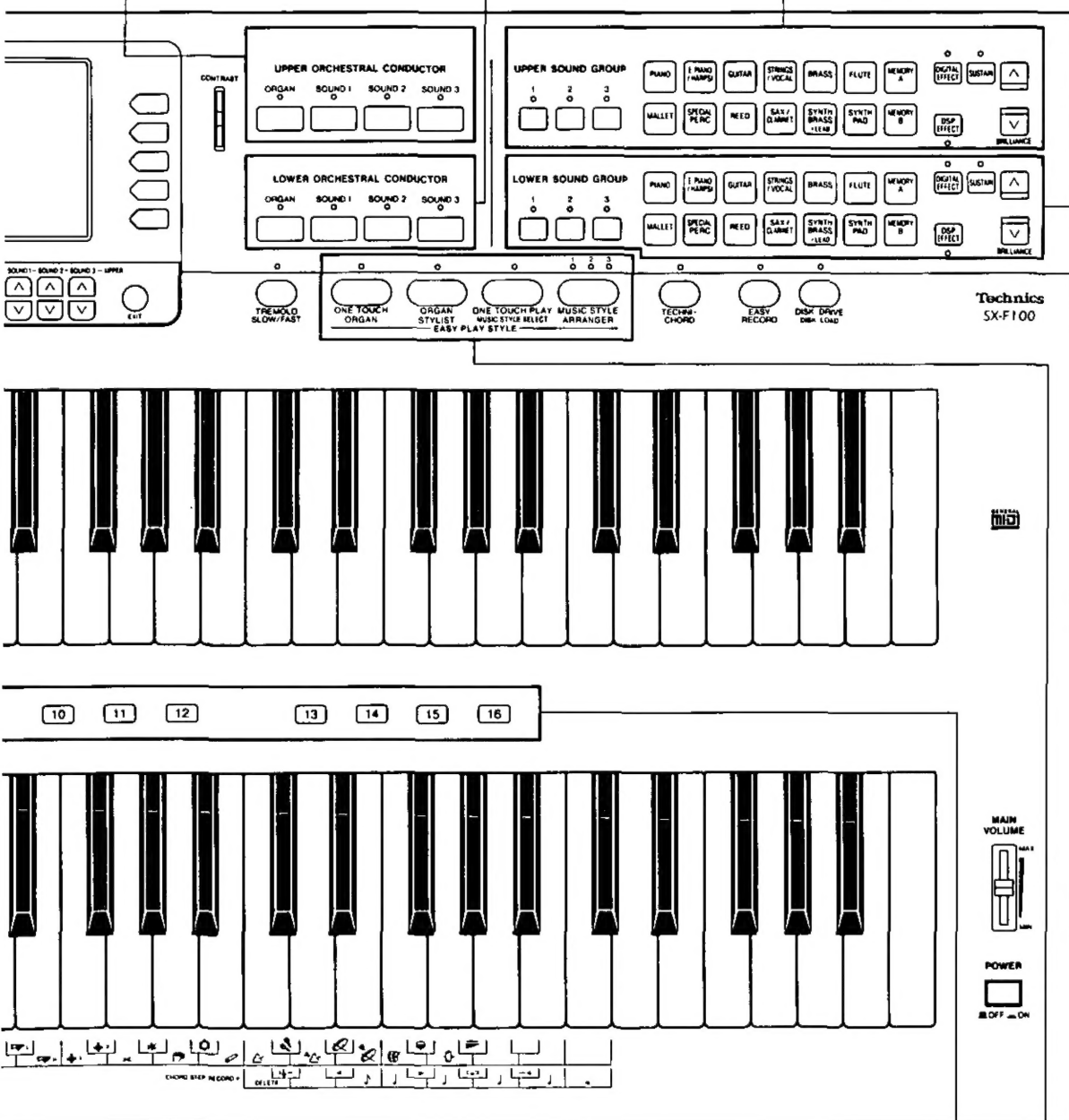
Select the sounds to be played on the upper keyboard. (Refer to page 41.)

LOWER ORCHESTRAL CONDUCTOR

Select the part to be played on the lower keyboard. (Refer to page 33.)

LOWER SOUND GROUP

Select the sounds to be played on the lower keyboard. (Refer to page 41.)



PANEL MEMORY

Store the current panel settings for instant recall. (Refer to page 53.)

EASY PLAY STYLE

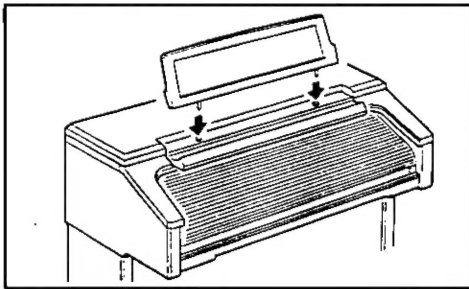
A simple operation provides automatic selection of the sounds, effects and various other panel settings which are suitable for the registration you chose.

Getting started

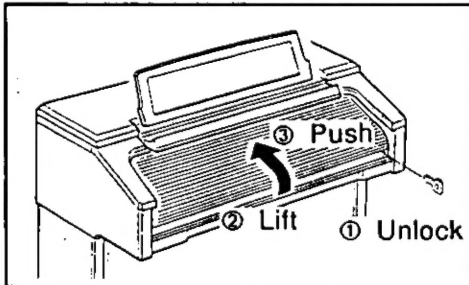
Before you play

A Plug the power cord into an outlet.

B **Music stand**
Insert the music stand in the two holes as shown in the figure.

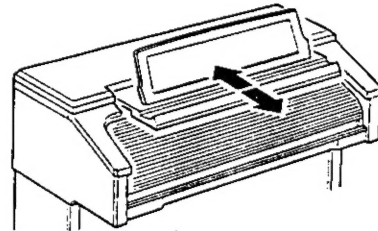


C **Keyboard cover**
Open and close the cover slowly.



Music stand

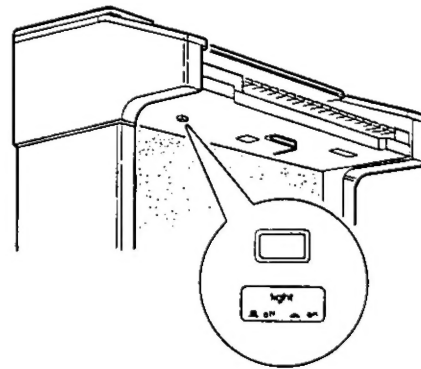
Music stand can be slid back or forward.



- To slide the music stand, first rise it up slightly.

Panel light

The panel light can be turned on by pressing the button on the left underside of the keyboards.



- The music stand light and foot light are also turned on.

■ About the backup memory

The panel settings are maintained in the backup memory for about one week after the power to this instrument is turned off. Other stored memories, such as the **SEQUENCER** and **COMPOSER**, are maintained for about 80 minutes. If you wish to keep the memory contents, before you turn off the instrument, use the SAVE procedure to store the desired data on a disk for recall at a later time.

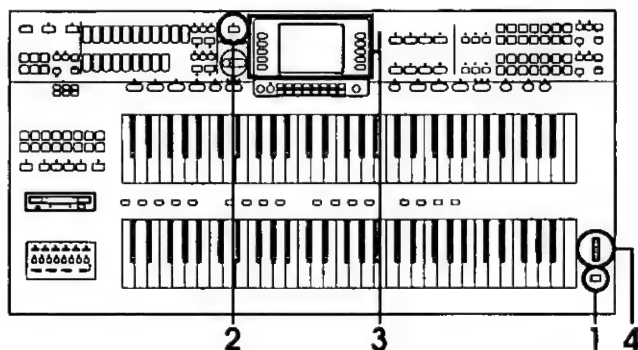
- The backup memory does not function until the power has been on for about 10 minutes.
- When you quit the operating mode, a warning display may appear to remind you to save the data. If this occurs, after checking the reminder, press the OK button.

■ Power-on settings

When the power to this instrument is turned on, ORGAN settings are automatically selected.

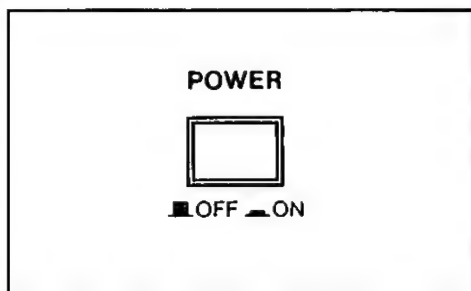
- If you wish to retain the settings which were in effect when you last turned off this instrument, set the POWER-ON MODE to BACK UP. (Refer to page 127.)

Playing



1

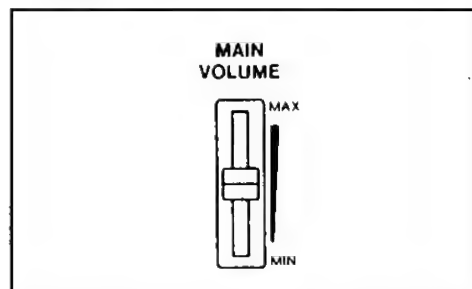
Press the **POWER** button to turn it on.



- The selected type of organ sound can be played on the upper and lower keyboards.

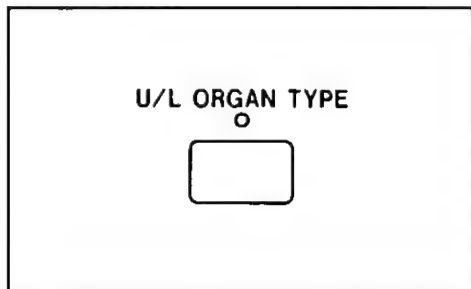
4

- Set the **MAIN VOLUME** to an appropriate level with the sliding control while playing the keyboards.
- Use the expression pedal to change the volume level as you play.



2

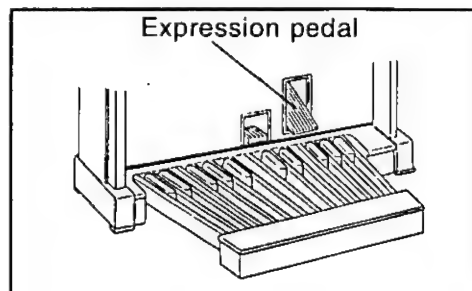
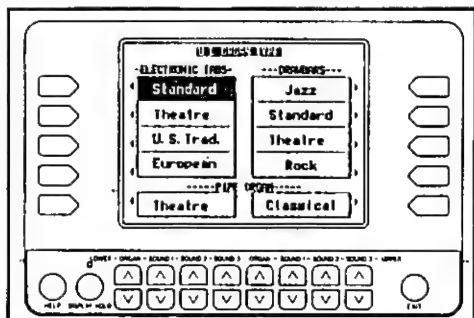
Press the **U/L ORGAN TYPE** button to turn it on.



- The display changes to the U/L ORGAN TYPE display.

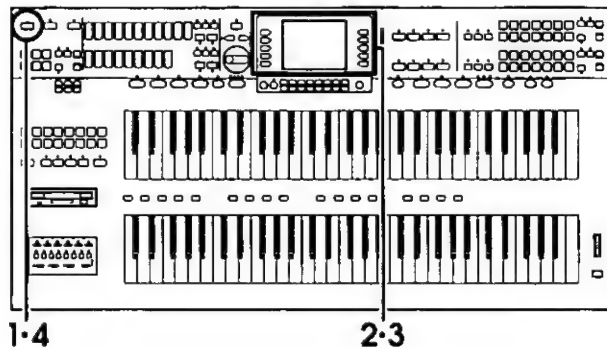
3

Select a sound from the list of organ sounds shown on the display.

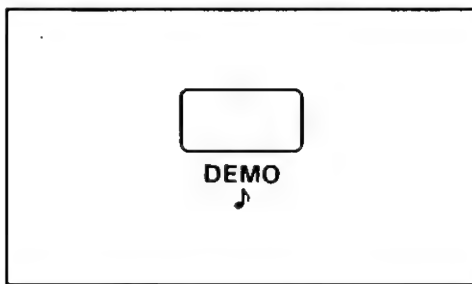


Listen to the demonstration.

Listen to a particular sound or rhythm demonstration.

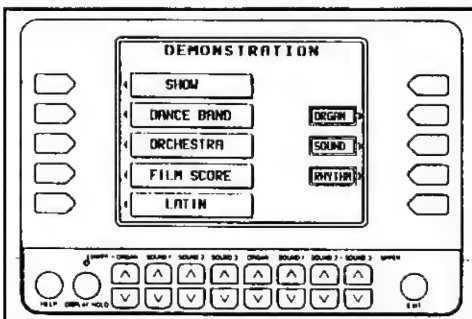


1 Press the **DEMO** button.



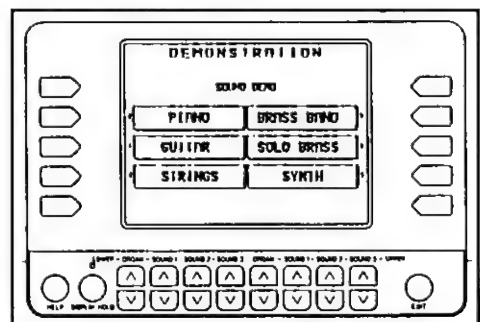
- The display changes to the DEMONSTRATION display.

2 Select ORGAN, SOUND or RHYTHM from the display.



- A list of demonstration songs is shown on the display.

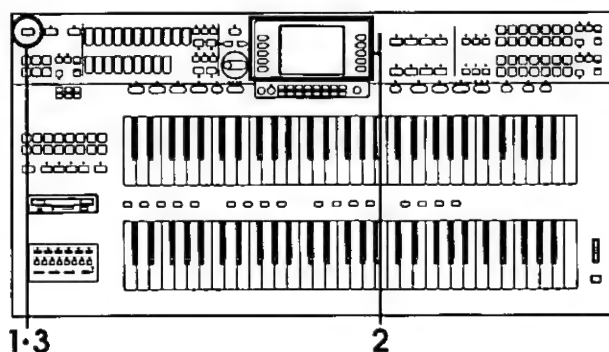
3 Press the button for the sound or rhythm demonstration performance you wish to hear.
<Example: SOUND>



- The demonstration performance corresponding to your selection will begin.
- Repeat this procedure to listen to other sounds and rhythms.
- To change from a SOUND demonstration to a RHYTHM or ORGAN demonstration, for example, press the **EXIT** button to return to the DEMONSTRATION display and then proceed from step 2.
- To end the demonstration before it has finished, again press the button for the selected sound or rhythm.

4 When you are finished listening to the demonstration tunes, press the **DEMO** button again.

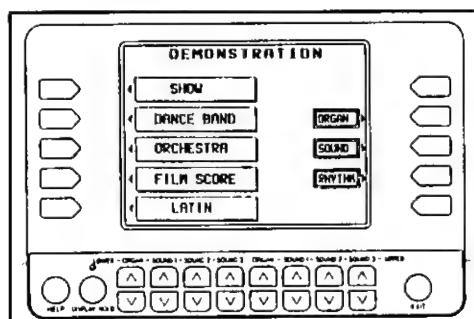
Listen to the style demonstration performance.



- 1** Press the **DEMO** button.
- The display changes to the DEMONSTRATION display.

- 3** When you are finished listening to the demonstration tunes, press the **DEMO** button again.

- 2** Use the buttons to the left of the display to select the style demonstration performance you wish to hear.

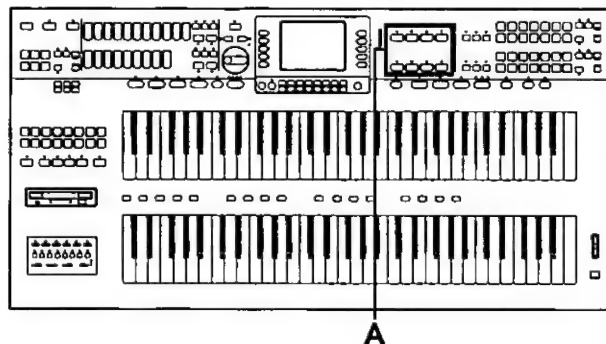


- The demonstration performance corresponding to your selection will begin.
- Repeat this procedure to listen to other styles.

- If you press and hold the **DEMO** button for a few seconds, or if you press first the **DEMO** button and then the **START/STOP** button, all the demonstration songs are played in order in a medley performance. The medley performance continues until the **START/STOP** button or the **DEMO** button is pressed again.
- During the medley performance, if you wish to skip from the current song to the next song, press the button for the highlighted song.
- Some of the buttons do not function while the demonstration performances are being played.

Selecting sounds: upper and lower keyboards

Orchestral Conductor



Parts

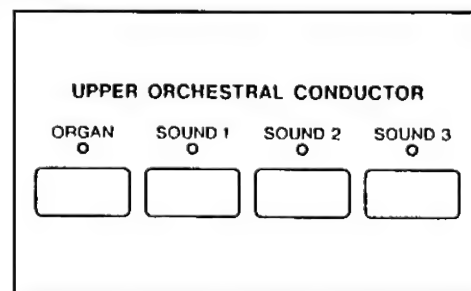
The following parts are available for the upper keyboard and lower keyboard.

ORGAN	Select an organ sound for this part.
SOUND 1 SOUND 2 SOUND 3	Select a different sound for each part.

- After selecting a sound for each part, the **ORCHESTRAL CONDUCTOR** is used to assign parts to the keyboards.

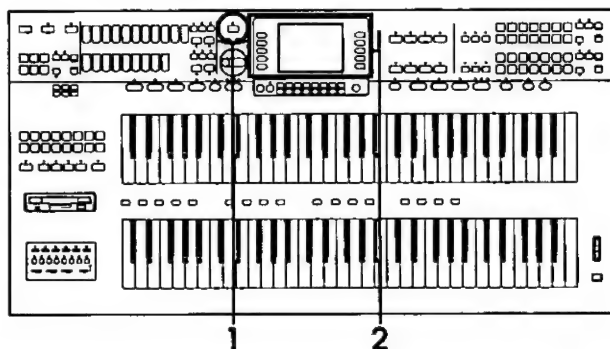
A

Use the **UPPER ORCHESTRAL CONDUCTOR** to select the part for the upper keyboard, and the **LOWER ORCHESTRAL CONDUCTOR** to select the part for the lower keyboard.

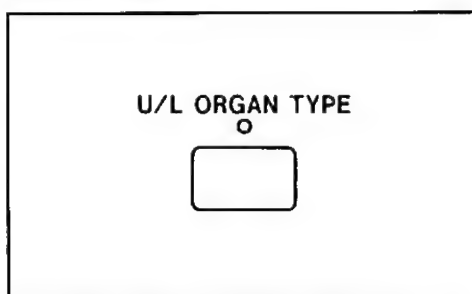


- Select the sounds for each part before assigning parts to the keyboards. (See below.)
- You can also combine sounds by turning on two or more buttons in the **ORCHESTRAL CONDUCTOR** at the same time.

ORGAN part

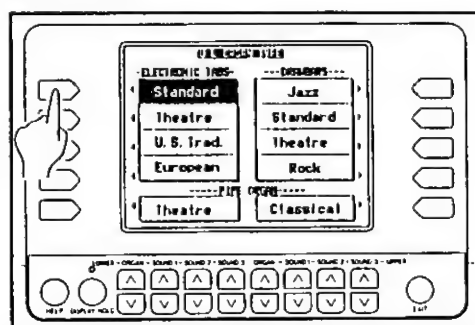


- 1 Press the **U/L ORGAN TYPE** button to turn it on.



- The display changes to the U/L ORGAN TYPE display.

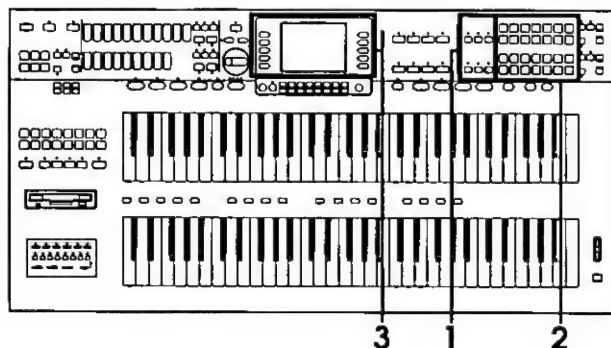
- 2 Select a type of organ sound from the display.



- The selected organ type is assigned to the upper and lower keyboards.
- Press the **EXIT** button to go back to the previous display.

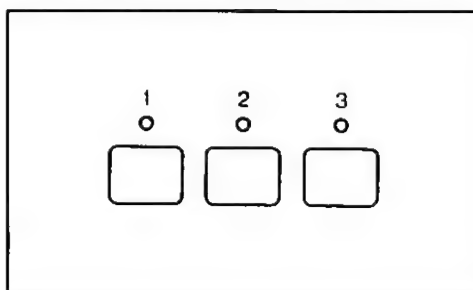
SOUND parts

The sound for the upper keyboard is selected with the buttons in the **UPPER SOUND GROUP**, and the sound for the lower keyboard with the buttons in the **LOWER SOUND GROUP**.



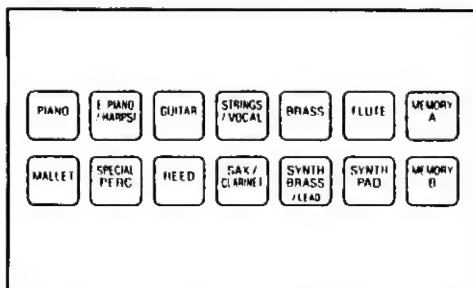
1

Press the 1, 2 or 3 button in the **UPPER SOUND GROUP** or **LOWER SOUND GROUP** to turn it on.



2

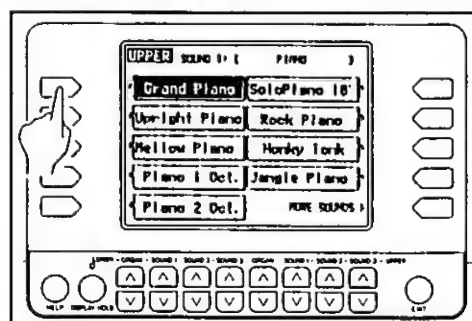
Press a sound button in the **UPPER SOUND GROUP** or **LOWER SOUND GROUP** to select a sound group.



- The display changes to a list of sounds.

3

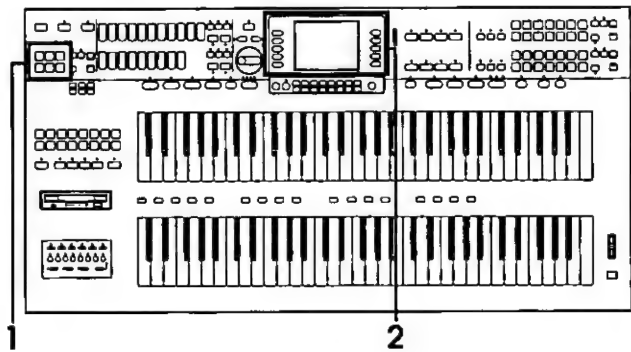
Select a sound for the part from the list on the display.



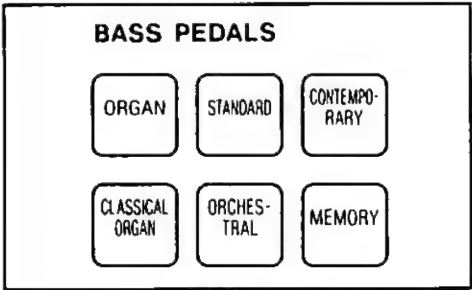
- To view a different part of the list, press the MORE SOUNDS button.
- Select sounds for the other parts in the same way.
- Press the **EXIT** button to go back to the previous display.

Selecting sounds: pedal keyboard

BASS part



- 1** Press a sound button in the **BASS PEDALS** section to select a sound group.



- The display changes to a list of sounds.

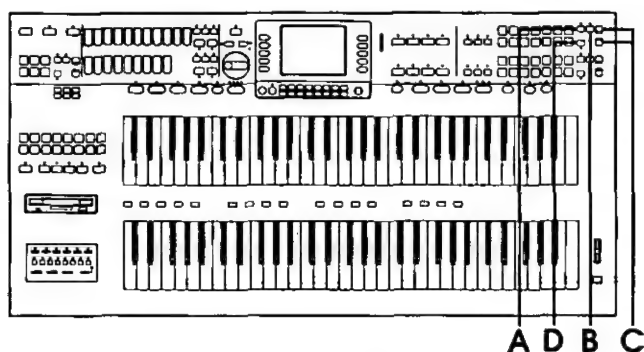
- 2** Select a sound from the display.



- Press the **EXIT** button to go back to the previous display.

- To play the sound you selected, play the pedal keyboard.
- You can combine two bass sounds.
(Refer to page 43.)

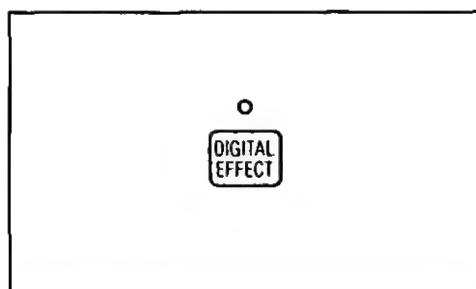
Effects



Add a feeling of spaciousness to the sound.

A

Press the **DIGITAL EFFECT** button to turn it on.

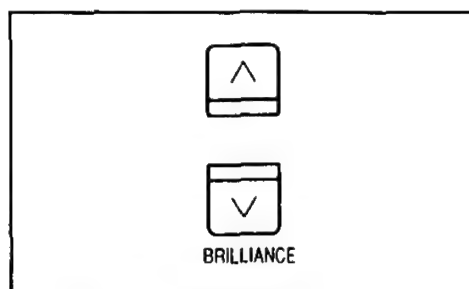


- The sound is broader and deeper.

Make the sound brighter.

C

Use the **BRILLIANCE** ^ and v buttons to adjust the brightness of the sound.

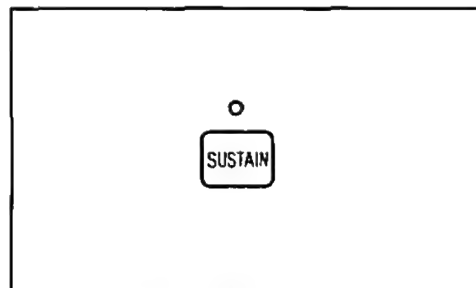


- There are three levels of brightness.

Add sustain.

B

Press the **SUSTAIN** button to turn it on.

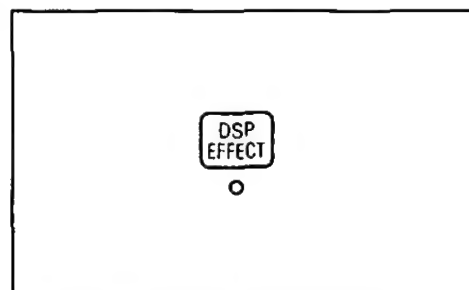


- Play and release a key. The tones fade out gradually after the key is released.

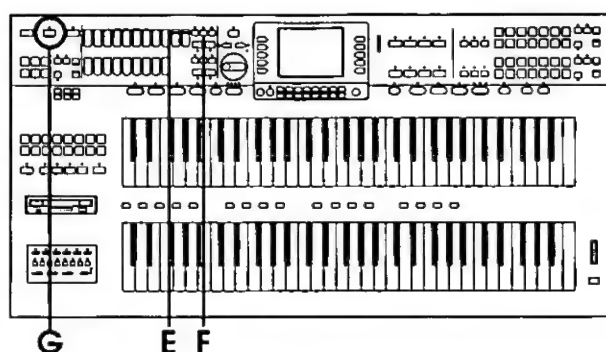
Change the quality of the sound.

D

Press the **DSP EFFECT** button to turn it on.

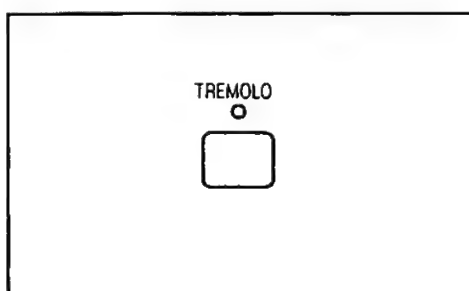


- Various effects are added to the sounds.



Add tremolo. (**ORGAN** part)

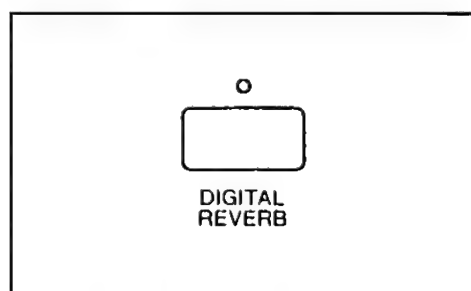
E Press the **TREMOLO** button to turn it on.



- A rapid oscillation in volume is applied to the **ORGAN** sounds.

Add reverberation.

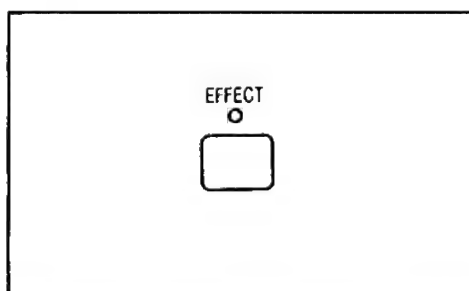
G Press the **DIGITAL REVERB** button to turn it on.



- The reverberation effect is applied to all sounds.

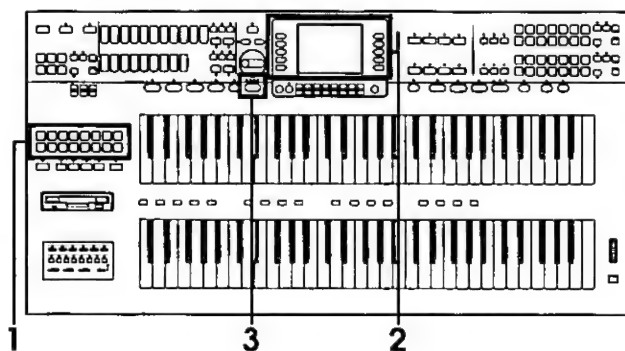
Add a feeling of spaciousness to the sound. (**ORGAN** part)

F Press the **EFFECT** button to turn it on.

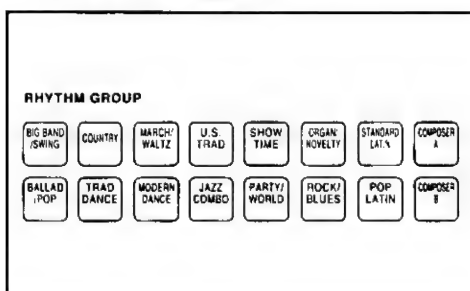


- The **ORGAN** sound is broader and deeper.

Playing automatic rhythms

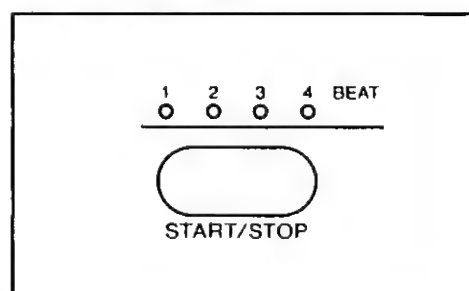


- 1 In the **RHYTHM GROUP** section, select a rhythm group.



- The display changes to a list of rhythms.

- 3 Start the rhythm by pressing the **START/STOP** button.



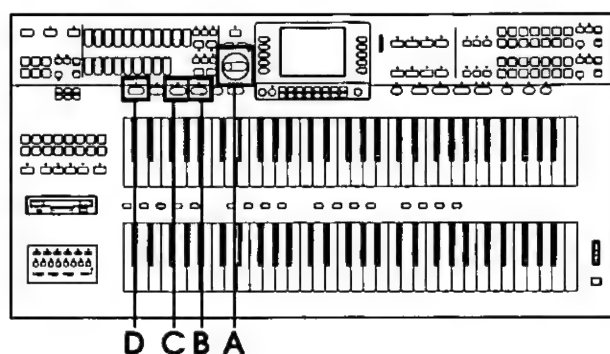
- Stop the rhythm by pressing the **START/STOP** button again.

- 2 Select a rhythm from the display.



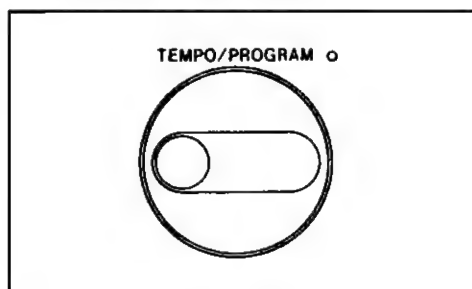
- Press the **EXIT** button to go back to the previous display.

- Rhythms marked with a ★ are especially effective for **ORGAN** sounds.



Adjust the tempo.

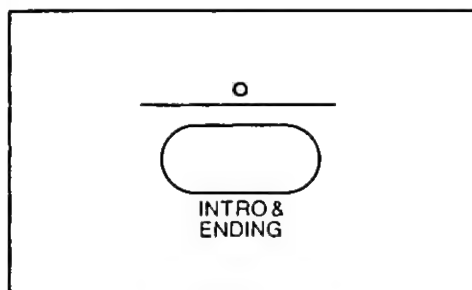
- A** Adjust the tempo with the **TEMPO/PROGRAM** dial.



- The tempo is shown in the display as "♩ =."

Insert an intro pattern.

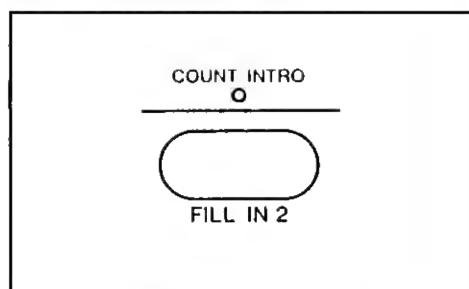
- B** To start your performance with an introduction, press the **INTRO & ENDING** button before starting the rhythm.



- An intro is played, after which the regular rhythm starts.

Insert a count.

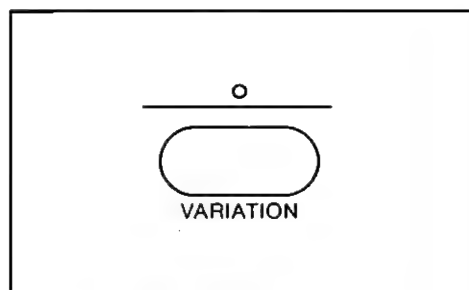
- C** To begin your performance with a one-measure count, press the **COUNT INTRO (FILL IN 2)** button before starting the rhythm.



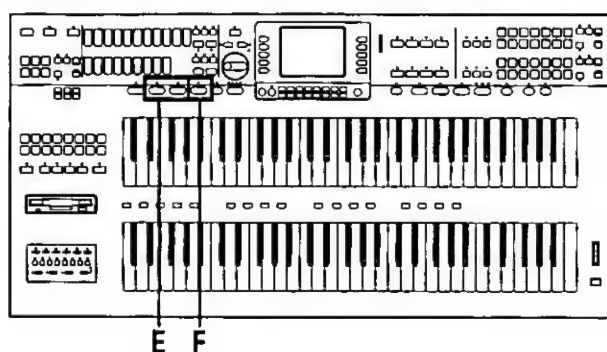
- A one-measure count is played, after which the normal rhythm pattern begins.

Select a variation pattern.

- D** During the rhythm performance, press the **VARIATION** button to turn it on.

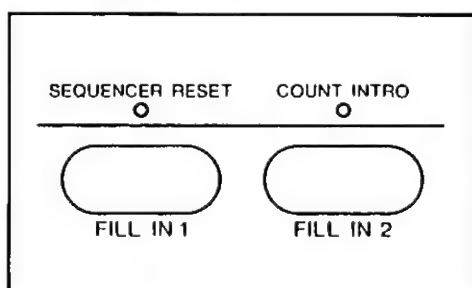


- The rhythm pattern changes to a flashier pattern.



Insert a fill-in pattern.

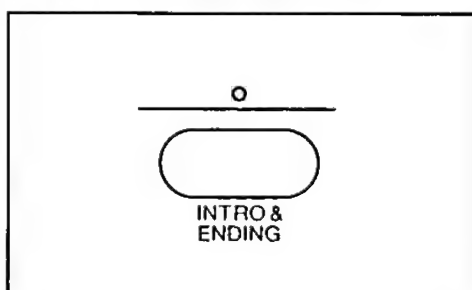
- E** While the preset rhythm pattern is playing, press either the **FILL IN 1** or **FILL IN 2** button.



- A fill-in pattern immediately starts to play.

Insert an ending pattern.

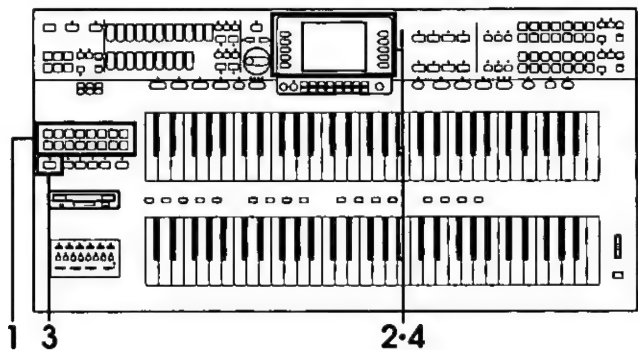
- F** While the rhythm is playing, press the **INTRO & ENDING** button.



- You will hear an ending pattern, and then the rhythm stops.

Automatic accompaniment

Use the AUTO PLAY CHORD

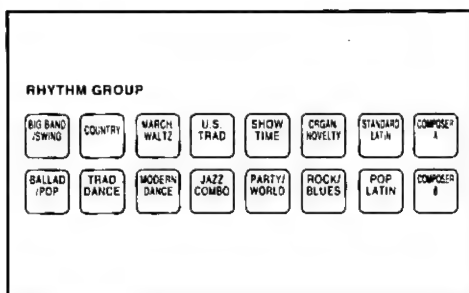


Use the **AUTO PLAY CHORD** with the following tune.



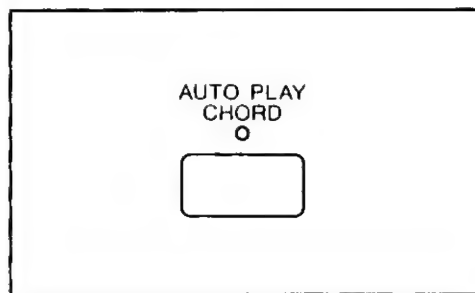
1

In the **RHYTHM GROUP** section, select a rhythm group.



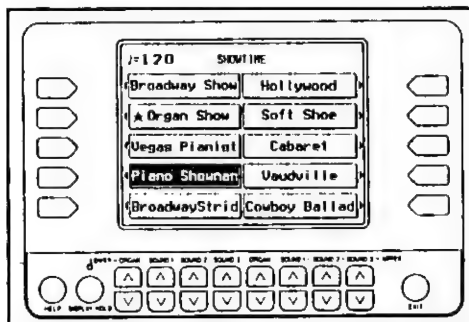
3

Press the **AUTO PLAY CHORD** button to turn it on.



2

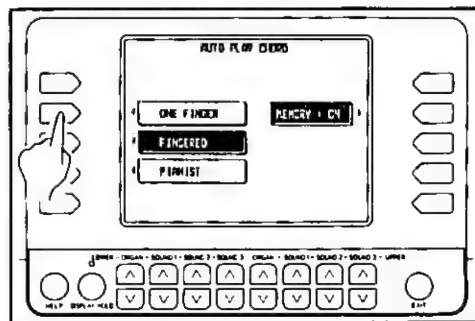
Select a rhythm from the list shown on the display.



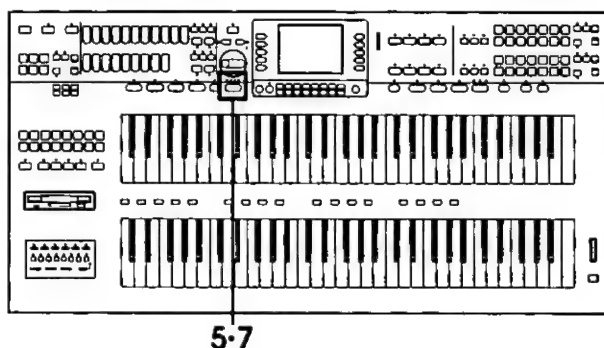
- Press the **EXIT** button to go back to the previous display.

4

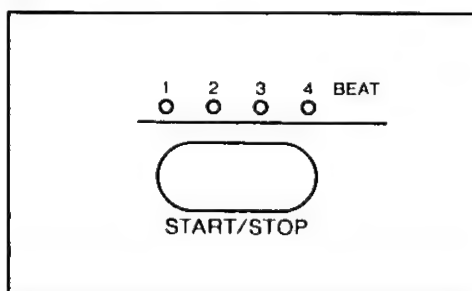
Select **ONE FINGER** on the display.



- After a few seconds, the display returns to the previous display.

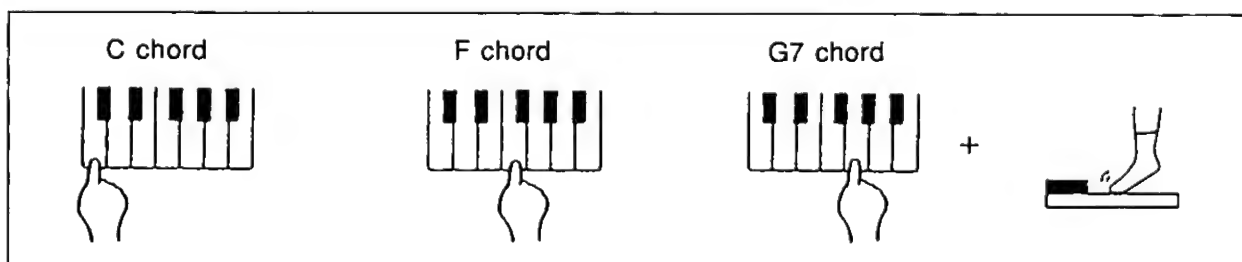


- 5** Press the **START/STOP** button to turn it on.



- 7** At the end of your performance, press the **START/STOP** button.

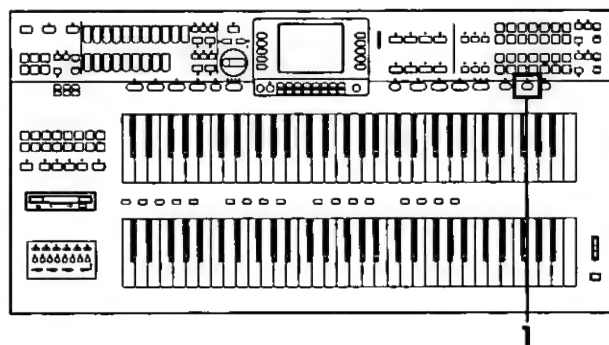
- 6** With your left hand, play chords on the lower keyboard, and with your right hand, play the melody on the upper keyboard.
- When you play the lower keyboard, the automatic accompaniment begins to play.
 - Where C, G7 and F are indicated in the music score, you can play the lower keyboard and pedal keyboard as shown in the figure below.



- In this example, you played chords by pressing the keys for the "root notes" (ONE FINGER chords). But you can also specify the chord by playing all the notes in the chord. (Refer to page 60.)

Record your performance

Use the **SEQUENCER** to record your performance.



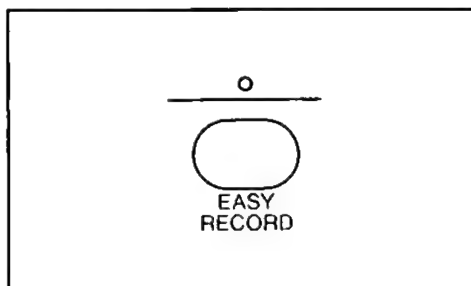
She Wore A Yellow Ribbon

March: Medium

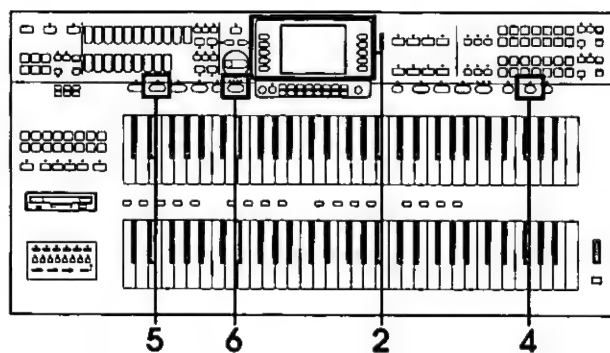


1

Press the **EASY RECORD** button to turn it on.

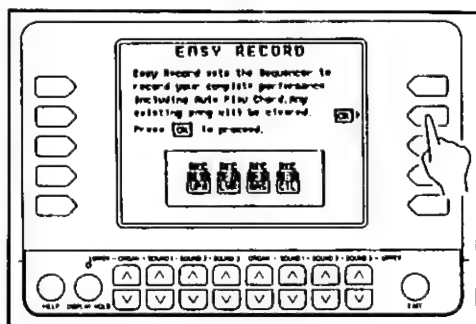


- The display changes.



2

Press the OK button.



3

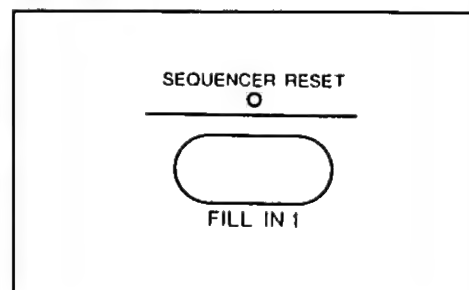
Play the song on the keyboards.

4

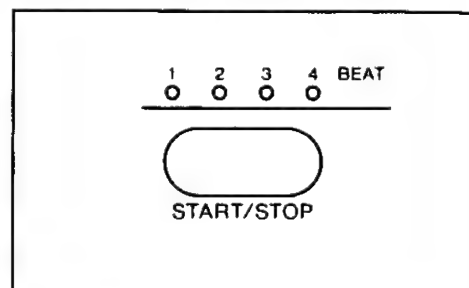
When you have finished playing, press the **EASY RECORD** button again to turn it off.

5

Press the **SEQUENCER RESET (FILL IN 1)** button.



6

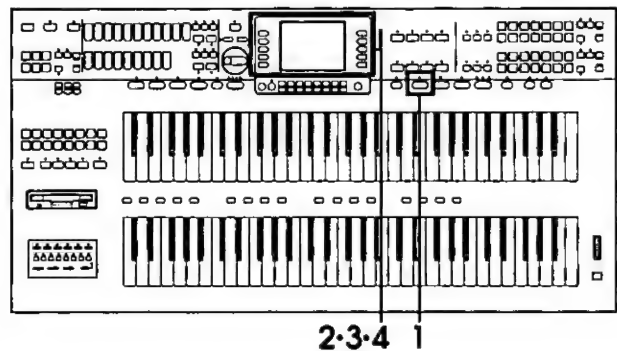
Press the **START/STOP** button.

- Your performance is played back just as you recorded it.

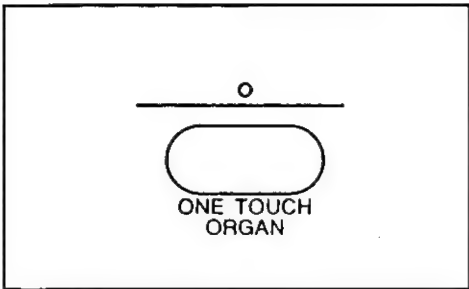
- You can also record several parts individually and then have them played back together for an ensemble performance. (Refer to page 73.)

Easy Play Style

Automatic setup of the ORGAN parts

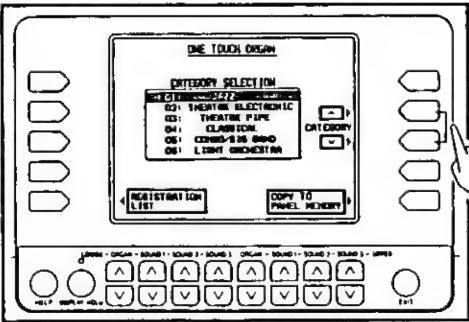


- 1** Press the **ONE TOUCH ORGAN** button to turn it on.



- The display changes.

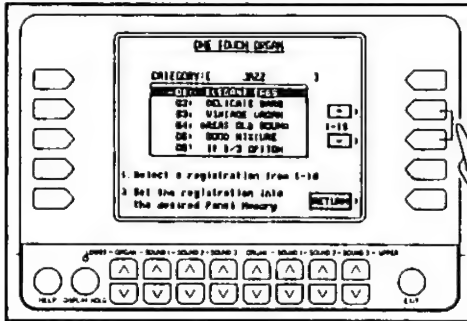
- 2** Use the \wedge and \vee buttons to select a category (performance style).



- 3** Press the **REGISTRATION LIST** button.

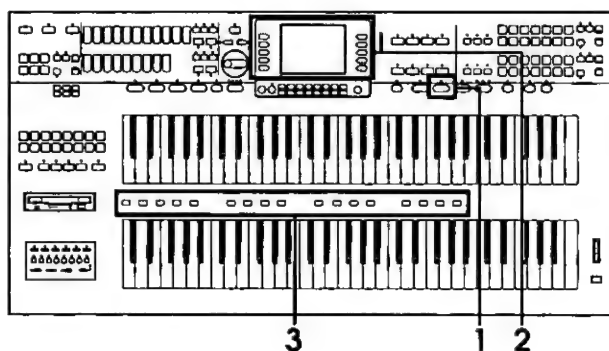
- The display changes.

- 4** Use the \wedge and \vee buttons to select a type of registration (01 to 16).

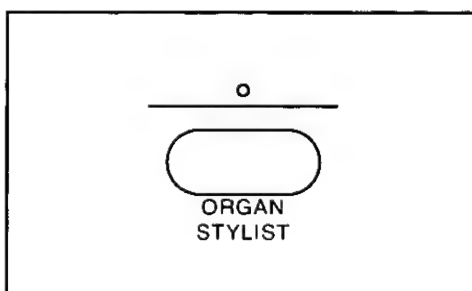


- The sounds and effects for each keyboard, and various other panel settings which are suitable for the type you chose are automatically selected.
- Press **ONE TOUCH ORGAN** button to turn it off to go back to the previous display.

Automatic setup of the **ORGAN** style

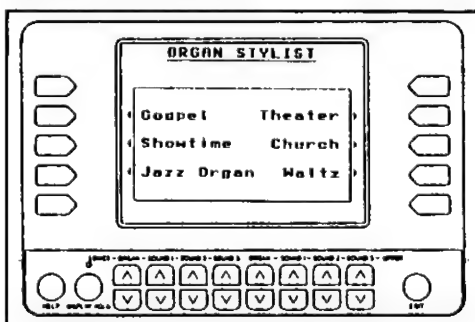


- 1 Press the **ORGAN STYLIST** button to turn it on.



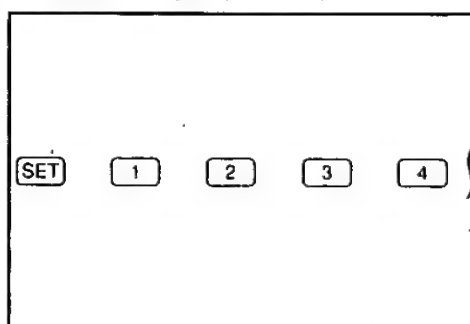
- The display changes.

- 2 Use the buttons to the left and right of the display to select a category (performance style).



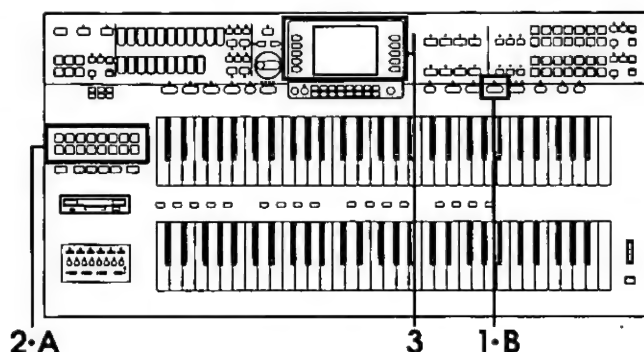
- When a category is selected, the contents of the current **PANEL MEMORY** are replaced. In this case, when you attempt to select a category, a confirmation display appears. Press the YES button to execute the function.
- A list of styles is shown on the display (1 to 16).

- 3 Use the **PANEL MEMORY** buttons to select a style (1 to 16).



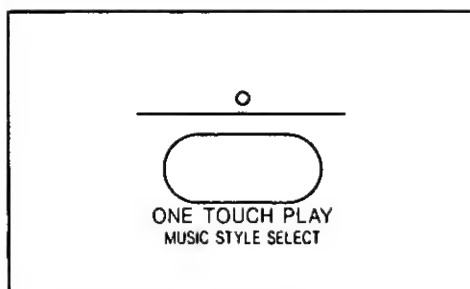
- The name of the selected style is shown on the display for a few seconds.
- The sounds and volume balances for each keyboard, rhythm, accompaniment and tempo, etc. suitable for the style you chose are automatically selected.
- Press **ORGAN STYLIST** button to turn it off to go back to the previous display.
- The **PANEL MEMORY** mode changes automatically to the **EXPAND** mode. (Refer to page 53.)

Automatic setup for the style and rhythm



MUSIC STYLE SELECT

- 1** Press the **ONE TOUCH PLAY** button momentarily to turn it on.



- The display changes.

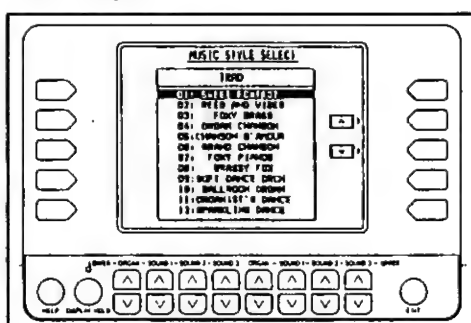
- The sounds and volume balances for each keyboard, rhythm, accompaniment and tempo, etc. suitable for the style you chose are automatically selected.
- When you play a chord on the lower keyboard, the automatic accompaniment begins to play. Play the melody on the upper keyboard.
- Press **ONE TOUCH PLAY** button to turn it off to go back to the previous display.

- 2** In the **RHYTHM GROUP** section, select a rhythm group.

ONE TOUCH PLAY

- A** Select a rhythm pattern. (Refer to page 18.)

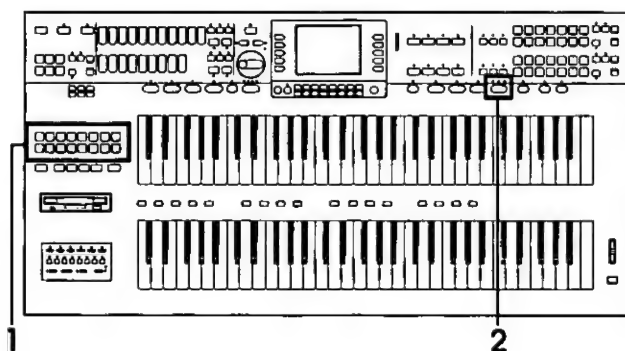
- 3** Use the \wedge and \vee buttons to select a music style.



- B** Press the **ONE TOUCH PLAY** button until its indicator goes out.

- The sounds and effects for each keyboard, the tempo, and various other panel settings which are suitable for the rhythm you chose are automatically selected.

Arranger feature

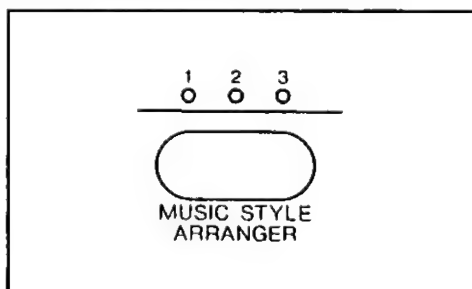


MUSIC STYLE ARRANGER

1 Select a rhythm pattern. (Refer to page 18.)

2 Press the **MUSIC STYLE ARRANGER** button to select the style (1, 2 or 3) you want at the beginning of your performance.

- 1: Simple pattern
- 2: Normal pattern
- 3: Flashy pattern



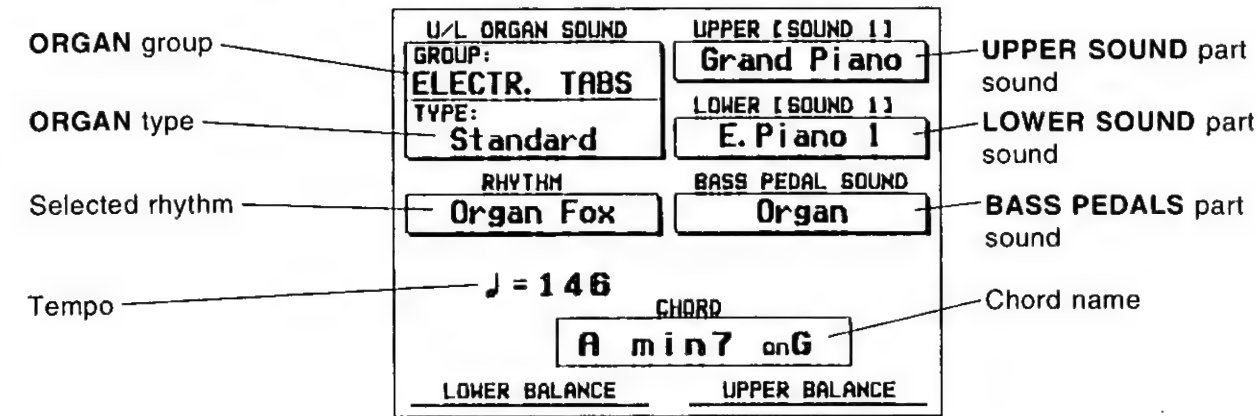
- The sounds and effects for each keyboard, the tempo, etc. suitable for the rhythm you chose are automatically selected.
- When you play a chord on the lower keyboard, the automatic accompaniment begins to play. Play the melody on the upper keyboard.
- While you are playing, press the **FILL IN 1** or **FILL IN 2** button. The specified **FILL IN** pattern plays, and then the music style changes.
- Each time the **FILL IN 1** button is pressed, the **FILL IN 1** pattern plays, and then the music style changes in the 3 → 2 → 1 order. And each time the **FILL IN 2** button is pressed, the **FILL IN 2** pattern plays, and then the style changes in the 1 → 2 → 3 order.

About the display

The display shows various information and is used for most of this instrument's operations.

Normal display

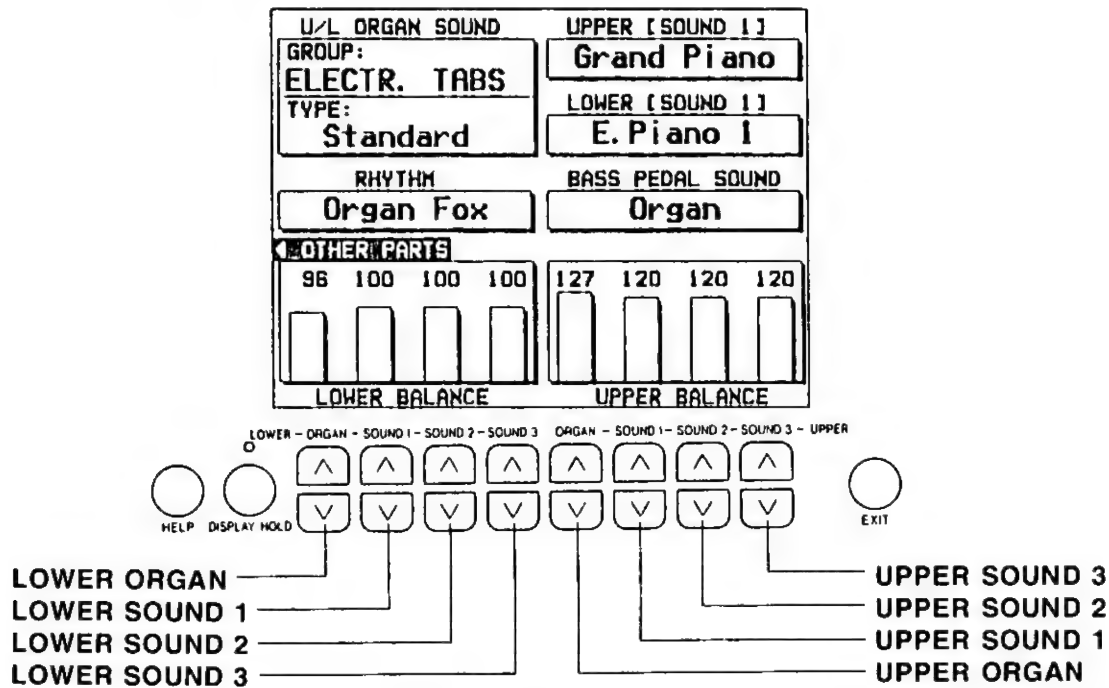
This illustration shows the kind of information you see on the display during a normal performance.



Volume balance

If you press one of the \wedge or \vee buttons directly below the display, the display changes to the balance display. The volume balance of each part is shown as a bar graph and a number (0 to 127).

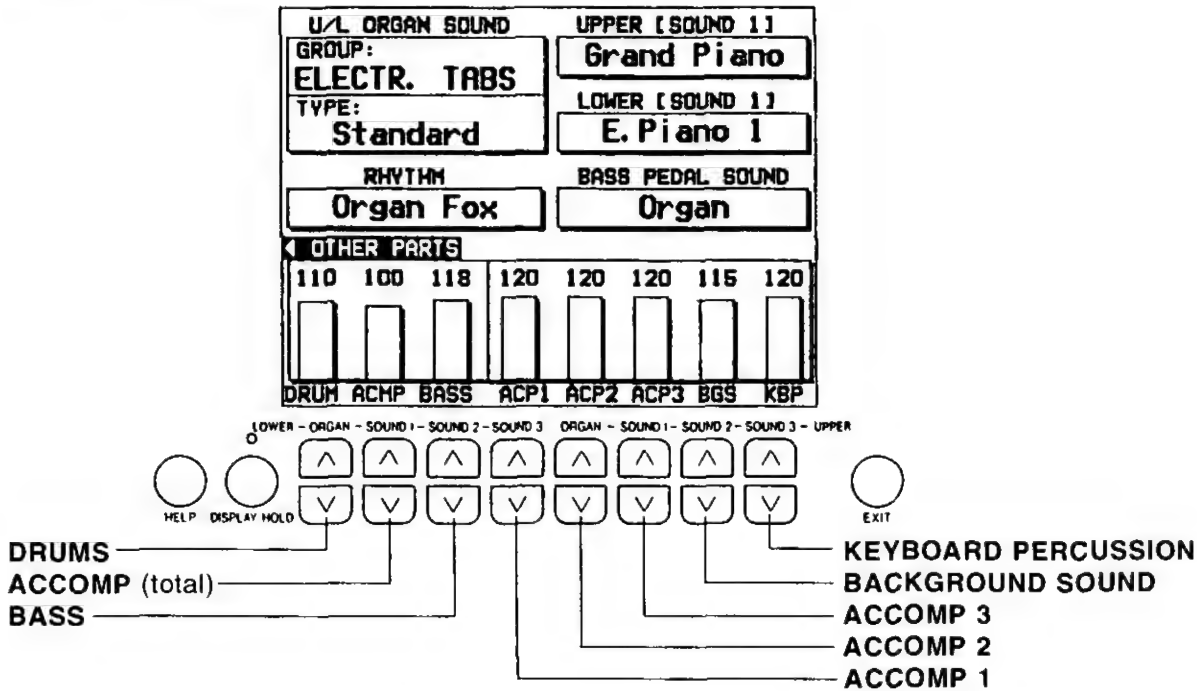
Use the \wedge and \vee buttons below the display to adjust the volume of each part.



- A few seconds after you change the settings, the display returns to the normal performance display.

■ OTHER PARTS

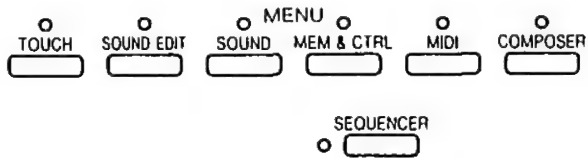
If you press the button for OTHER PARTS, the display changes to the balance display for other parts.



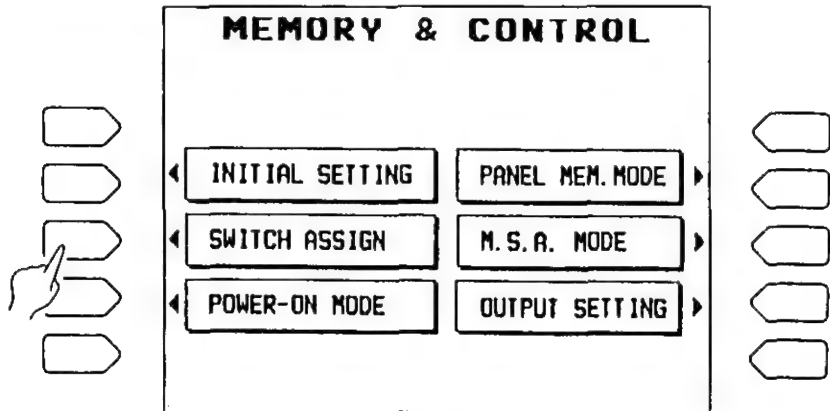
- This button is also used to access the PART 8 to 15 volume display. These parts are used in conjunction with **SEQUENCER** and **MIDI** functions.
- A few seconds after you change the setting, the display returns to the normal performance display.

Menu display

The **MENU** and other buttons beneath the **PROGRAM SECTION** cover are used to control multiple functions. Pressing one of the buttons will access the corresponding menu display.



■ Example of menu display: MEM & CTRL

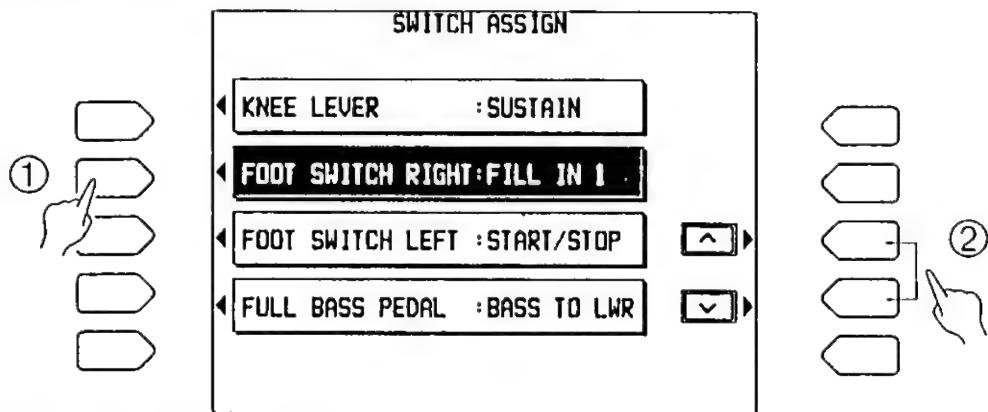


- Select a function from the menu display by pressing the corresponding button to the left or right of the display indicated by the ◀ and ▶ arrows.
- In this manual, the steps describing how to select a function from a menu display are generally abbreviated as follows, for example: "On the **MEM & CTRL** menu display, select **SWITCH ASSIGN**."

Setting display

When setting various functions, the available operations are shown on the display. The buttons to the right, left and/or directly below the display are used to select and adjust the settings.

■ Example of setting display: SWITCH ASSIGN



<Example of procedure to set a function>

- ① In the illustration above, four functions are shown on the setting display: KNEE LEVER, FOOT SWITCH RIGHT, FOOT SWITCH LEFT and FULL BASS PEDAL. First select one of the functions by pressing the corresponding button indicated by the ◀ arrow. (The currently selected function is highlighted.)
- In this manual, the procedure to indicate that you should press a button to select an item from the display is generally written simply as follows: "Select FOOT SWITCH RIGHT."
- ② The ^ and v buttons on the display are operated by pressing the corresponding buttons indicated by the ▶ arrows. These buttons are used, when appropriate, to change the setting for the selected function.
- In this manual, this procedure is written as follows: "Use the ^ and v buttons to select the function."

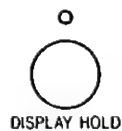
EXIT button

While the setting display is shown, press this button to go back to the previous display.



DISPLAY HOLD button

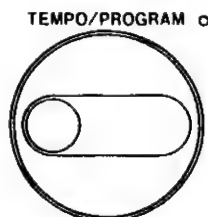
Press this button to turn it on when you wish to maintain the current display. For example, even during a performance, you can monitor information which is not shown on the normal display.



- If any of the MENU buttons is pressed, the DISPLAY HOLD mode is canceled.

TEMPO/PROGRAM dial

If the green **TEMPO/PROGRAM** indicator is lit while you are using the display to adjust a setting, it indicates that the dial may be used to change the displayed value or setting.



CONTRAST

Adjust the contrast of the display.

CONTRAST



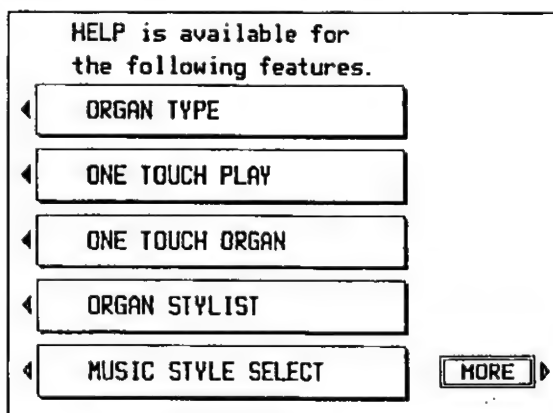
HELP display

You can find an explanation of most of the instrument functions right on the display.

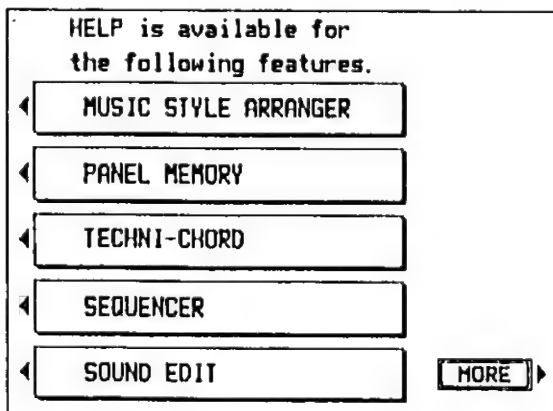
1. Press the **HELP** button (at the lower left of the display).



- The following display appears.



- Press the **MORE** button to display other functions.



- Press the **RETURN** button to go back to the previous display.

2. Select a function.

- Information about the selected function will appear on the display. There may be several "pages" of information, which you can view by following the instructions on the display.
- If you press the **HELP** button while you are in the process of setting a function, the display may change directly to the **HELP** mode.
- For a detailed explanation of each function, please refer to the relevant pages in this manual.

ORGAN TYPE	page 34
ONE TOUCH PLAY	page 63
ONE TOUCH ORGAN	page 48
ORGAN SYLIST	page 49
MUSIC STYLE SELECT	page 64
MUSIC STYLE ARRANGER	page 65
PANEL MEMORY	page 53
TECHNI-CHORD	page 51
SEQUENCER	page 67
SOUND EDIT	page 128
COMPOSER	page 93
FLOPPY DISK FUNCTIONS	page 103
MIDI	page 142

3. When you have finished reading the message, press the **HELP** button again.

Part I Sounds and effects

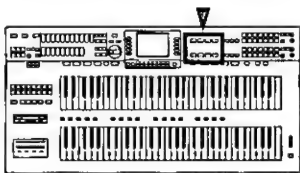
The sounds for the upper keyboard, lower keyboard and pedal keyboard are grouped into “parts.” A sound is selected for each part, and then the parts are assigned to the keyboards by the **ORCHESTRAL CONDUCTOR**.

Parts

You can assign four sound parts to the upper keyboard (**UPPER ORGAN**, **UPPER SOUND 1**, **UPPER SOUND 2** or **UPPER SOUND 3**) and four sound parts to the lower keyboard (**LOWER ORGAN**, **LOWER SOUND 1**, **LOWER SOUND 2** or **LOWER SOUND 3**). The **BASS** part is used for the pedal keyboard. The sound for each part is selected with the buttons as shown in the diagram below.

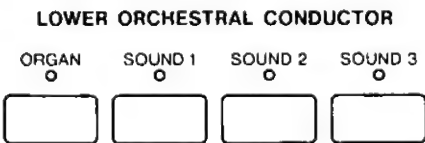
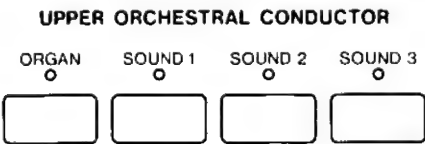
	Part	Sound buttons
Upper keyboard	ORGAN	UPPER ORGAN
	SOUND 1 SOUND 2 SOUND 3	UPPER SOUND GROUP
Lower keyboard	ORGAN	LOWER ORGAN
	SOUND 1 SOUND 2 SOUND 3	LOWER SOUND GROUP
Pedal keyboard	BASS	BASS PEDALS

Orchestral Conductor



After a sound is selected for each part, the **ORCHESTRAL CONDUCTOR** buttons are used to assign a part to the upper keyboard and a part to the lower keyboard.

The **UPPER ORCHESTRAL CONDUCTOR** buttons are used to select the part for the upper keyboard, and the **LOWER ORCHESTRAL CONDUCTOR** buttons to select the part for the lower keyboard.



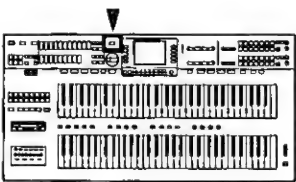
- By selecting sounds for each part beforehand, you can easily change from one sound to another during your performance just by selecting another **ORCHESTRAL CONDUCTOR** button.
- You can combine sounds by turning on two or more buttons in the **ORCHESTRAL CONDUCTOR** at the same time.

The number of notes which can be produced simultaneously for each part is as follows:

ORGAN part:	64 notes
All other parts:	64 notes

- When an **ORCHESTRAL CONDUCTOR** selection is changed, the display shows the currently selected sound for each part.

Selecting a type of organ

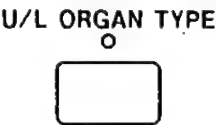


All types of organs are available for the **ORGAN** part. When you change from one type of organ to another, not only the sounds, but the entire configuration changes to that of the selected type, just as if you were playing a completely different instrument! You don't have just one organ, but many different types of organs, all in one instrument.

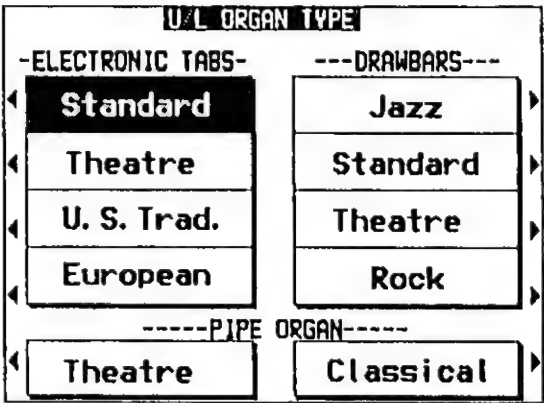
Organ type

Select the desired organ type from the representative types provided.

- 1. Press the **U/L ORGAN TYPE** button to turn it on.

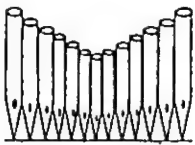


- The display changes to the following.



- 2. Select an organ type from the display.

<div>ELECTRONIC TABS group</div> <div><div>8"4"2 7/8"2"1 7/8"1"</div></div>	Standard	Technics-type electronic organ sound
	Theatre	Theatre-organ-type of electronic organ sound
	U.S. Trad	Typical American electronic organ sound
	European	Typical European electronic organ sound
<div>DRAWBARS group</div> <div><div>85432121432164321321</div></div>	Jazz	Drawbar organ sound for jazz performance
	Standard	Standard-type drawbar organ sound
	Theatre	Theatre-type drawbar organ sound
	Rock	Drawbar organ sound for rock performance

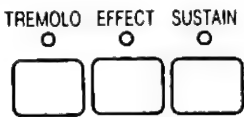
<div>PIPE ORGAN group</div> <div></div>	Theatre	Theatre-type pipe organ sound
	Classical	Pipe organ sound for classical music performance

- On the display, the selected type is highlighted.
 - The sounds for the **UPPER ORGAN** part and **LOWER ORGAN** part change to those for the selected type.
 - To play the selected organ sound on each keyboard, turn on the **ORGAN** buttons in the **ORCHESTRAL CONDUCTOR**.
 - You cannot select a different organ type for the upper keyboard and lower keyboard.
- You can adjust the volume for the upper and lower parts. (Refer to page 29.)
 - Press the **EXIT** button to return to the normal volume display.
- Adjusting the sound**

The nuance of the sound for upper and lower keyboards can be changed independently. Two methods are available. With **MANUAL** (page 36) you can control the various components of the sound. Or you can select one of the **PRESET** sounds (page 40) provided for each organ type.

Organ effects

Add effects to the **ORGAN** part sounds.



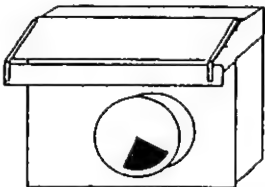
- These buttons do not work when the **PRESET** button (page 40) for the same keyboard is on.

■ TREMOLO

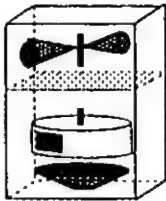
Tremolo is a rapid oscillation in volume, producing the effect of a rotating speaker. Various tremolos can be set for use with high-range sounds and low-range sounds. For example, you can achieve effects such as those shown below.

ELECTRONIC TAB group:
DRAWBARS group:

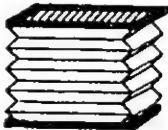
- Single-rotor-type revolving speaker effect.



- Double-rotor-type revolving speaker effect.

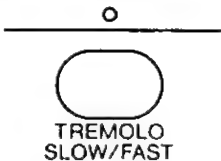


PIPE ORGAN group: A distinctive vibrating effect, peculiar to pipe organs, of air flowing through the pipes (TREMULANT).



TREMOLO SLOW/FAST

When the **TREMOLO** effect is active, press the **TREMOLO SLOW/FAST** button to turn it on. The rotating speed of the speaker is accelerated.



- The type of **TREMOLO** and how it is applied can be adjusted. (Refer to page 118.)
- The **TREMOLO** can be set to on or off for each tab sound and **EXTRA TAB VOICES** sound. (Refer to page 38.)

■ EFFECT

This is the beautiful wide effect of many instruments playing in unison.

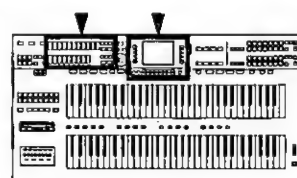
- The type of effect can be changed. (Refer to page 38.)
- **EFFECT** can be set to on or off for each flute-type tab sound and **EXTRA TAB VOICES** sound.

■ SUSTAIN

SUSTAIN is the gradual fading out of musical tones after the key is released.

- The length of the sustain can be adjusted. (Refer to page 45.)

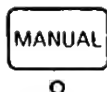
Setting the Organ sound: Manual



After selecting the desired organ type, you can change the nuance of the sound by using the tab buttons and the display to adjust its various components.

Outline of MANUAL settings

1. Select the organ type.
2. In the **UPPER ORGAN** or **LOWER ORGAN** section, press the **MANUAL** button to turn it on to change the sound for the respective keyboard.



3. Use the tab buttons and the display to select the desired sound. (Refer to the following section.)

■ Using the tab buttons

Organ sounds are obtained by combining different sound pitches (feet). By turning the tab buttons on and off, you can combine pitches to modify the selected organ sound.

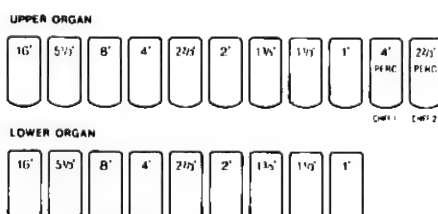
■ Using the display

Special tabs (**EXTRA TAB VOICES**) and effects are provided for each individual organ type. These effects, used along with the tab buttons, allow you broad flexibility in creating the exact sound you want.

- The sound components which you can adjust differ depending on the type of organ.
- The settings are common for all the sounds in the same organ group.
- The settings are memorized independently for each organ group, so that whenever the **MANUAL** sound is selected for the same organ group, the sound you modified is automatically available.
- In the **PIPE ORGAN** group (Classical, Theatre), the sound settings can be made for each type.

Using the tab buttons to modify the sound

In the **UPPER ORGAN** or **LOWER ORGAN** section, use the tab buttons to change the sound for the respective keyboard.



- Press the lower part of a tab button to turn it on, and the upper part to turn it off.
- When an organ type from the **DRAWBARS** group is selected, the tab buttons work as drawbar-volume-setting buttons. In this case, press and hold the upper part of the button to decrease the volume, and the lower part to increase the volume. While the volume is being adjusted, the status of the drawbars is shown on the display. (Refer to page 38.)

■ Percussives (upper keyboard)

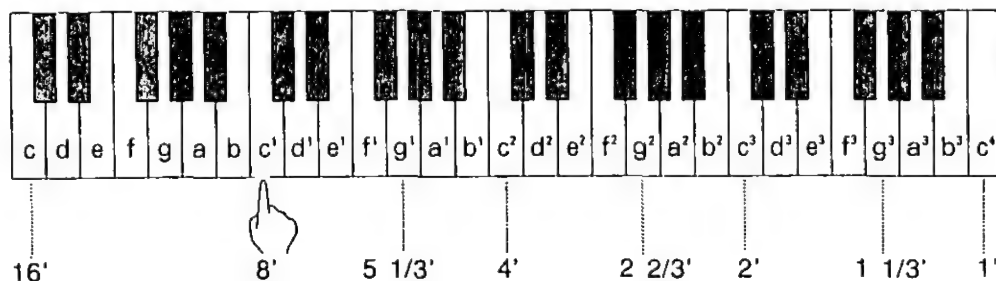
PERC adds a tone with a fast initial attack to the tab sounds. You can get a sharp sound by combining **PERC** sounds with other tab sounds.

- When an organ type from the **PIPE ORGAN** group is selected, the **PERC** buttons work as **CHIFF** buttons. "Chiff" is the characteristic sound of air being sent to the pipes in a pipe organ. (Refer to page 39.)

About feet marks

The feet indication on each tab button (for example **8'**) refers to the pitch of a rank of pipes in a pipe organ. If **8'** is used as the standard (the pitch as played on the keyboard), a **16'** rank pitch will be one octave below the **8'** rank pitch, and a **4'** rank pitch one octave above.

When the **C¹** key is pressed, the sounds of the different pitch ranks are as follows.



Using the display to modify the sound

When a **MANUAL** button is turned on, or when a **MANUAL** button is on and the tab buttons are operated, the setting display is shown.

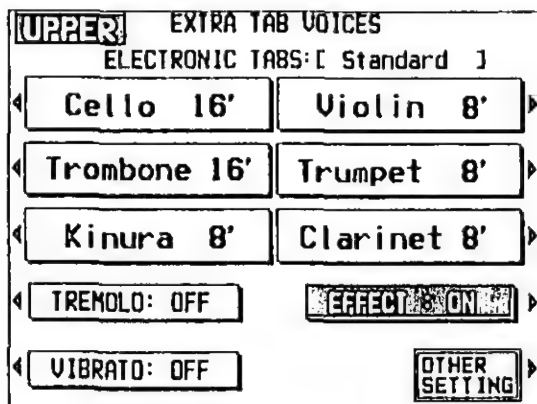
■ ELECTRONIC TABS group

EXTRA TAB VOICES settings

On the display, select the sounds you wish to add.

- The setting switches between on and off each time the button is pressed.

(Example: Upper keyboard)



Press the **OTHER SETTING** button to change other settings.

- On the display, the selected sounds are highlighted.
- You can select more than one sound at the same time.

Adding effects

Add effects to the EXTRA TAB VOICES sounds.

Press the button for each effect to turn it on or off.

TREMOLO: Tremolo is a rapid oscillation in volume, producing the effect of a rotating speaker.

EFFECT: Add breadth to the sound.

VIBRATO: Add vibrato to the sound.

Volume balance adjustment

Adjust the volume of the EXTRA TAB VOICES in relation to the tab sounds from the panel buttons.

Select **BALANCE**, and use the \wedge and \vee buttons to adjust the volume (0 to 127).

- When set to 100, the volume of the EXTRA TAB VOICES is the same as the volume of the tab sounds.

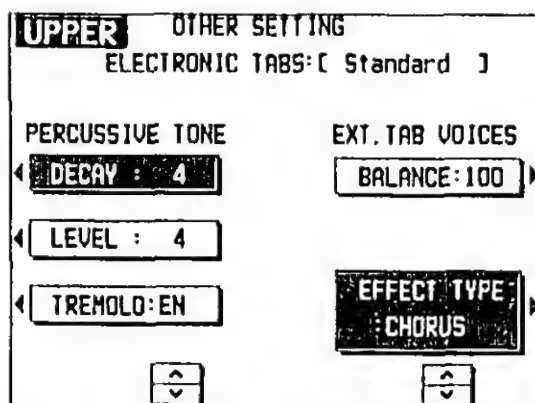
Effect type setting

Use the **EFFECT TYPE** \wedge and \vee buttons to select the type of effect (CELESTE or CHORUS).

- When this setting is changed, all effects applied to the **ORGAN** part change to the same type.
- You can change other effect types. (Refer to page 122.)

Percussive tone adjustment (upper keyboard only)

Adjust the **PERC** sound.



Select an attribute of the **PERCUSSIVE TONE**. Use the \wedge and \vee buttons to change the setting for the attribute.

DECAY

Adjust the decay time (1 to 8).

LEVEL

Adjust the volume (1 to 8).

TREMOLO

Turn the tremolo effect on or off.

EN: The tremolo effect is on for the percussive tone.

DIS: The tremolo effect is off.

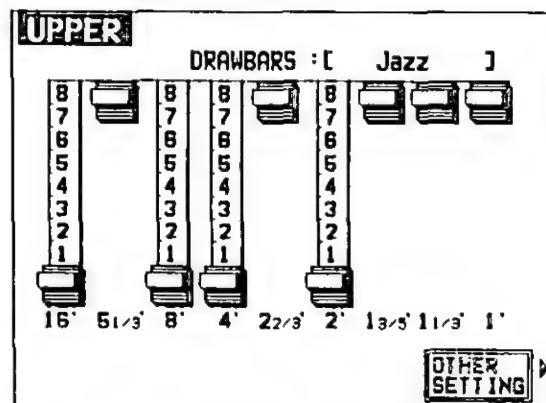
- If the **TREMOLO** button on the panel is off, the tremolo effect is not applied even when the TREMOLO is set to EN.

■ DRAWBARS group**Drawbar (tab volumes) adjustment**

Adjust with the respective tab buttons.

- The drawbars are shown on the display.

(Example: upper keyboard)



Press the **OTHER SETTING** button to change other settings.

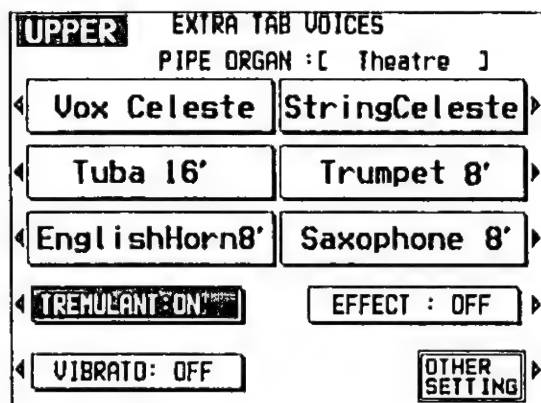
- The numbers below the drawbars correspond to the feet numbers of the tab buttons.
- Select a setting from 0 to 8. When set to 0, no sound is produced.

■ PIPE ORGAN group

EXTRA TAB VOICES settings

On the display, select the sounds you wish to add.

- The setting switches between on and off each time the button is pressed.



Press the OTHER SETTING button to change other settings.

- On the display, the selected sound is highlighted.
- You can select more than one sound at the same time.

Adding effects

Add effects to the EXTRA TAB VOICES sounds.

Press the button for each effect to turn it on or off.

TREMULANT

Turn the tremulant on or off.

EFFECT

Add breadth to the sound.

VIBRATO

Add vibrato to the sound.

Effect type setting

Select the type of EFFECT. (Refer to page 38.)

Percussive tone adjustment (upper keyboard only)

Adjust the PERC sound. (Refer to page 38.)

Volume balance adjustment

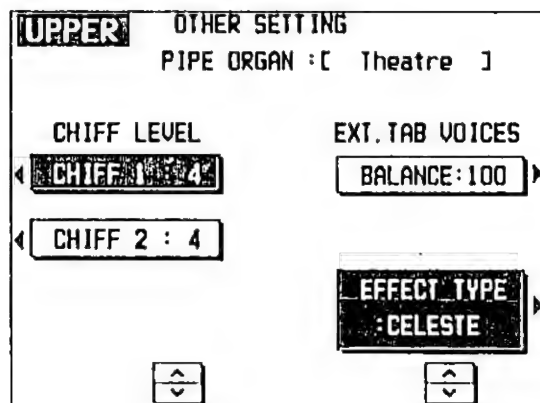
Adjust the volume of the EXTRA TAB VOICES in relation to the tab sounds from the panel buttons. (Refer to page 38.)

Effect type setting

Select the type of EFFECT. (Refer to page 38.)

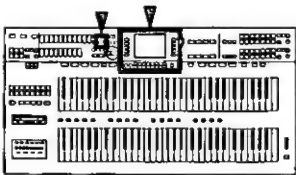
Chiff level adjustment (upper keyboard only)

For pipe organ types, the PERC buttons are used to add CHIFF sounds. (Chiff is the characteristic sound of air being sent to the pipes in a pipe organ.) Two chiff sounds, 1 and 2, are available, and the volume can be adjusted for each.



1. Select CHIFF 1 or CHIFF 2.
2. Use the ^ and v to adjust the volume (1 to 8).
3. Repeat steps 1 and 2 as desired for the other chiff volume.

Setting the Organ sound: Preset



After selecting the desired organ type, choose any of the many preset sounds provided for each type.

PRESET

Select one of the **PRESET** sounds provided for each organ type.

1. Select the organ type.

2. To change the organ sound for the upper keyboard, press the **PRESET** button to turn it on in the **UPPER ORGAN** section. For the lower keyboard, press the **PRESET** button to turn it on in the **LOWER ORGAN** section.
3. Select a sound from the list on the display.

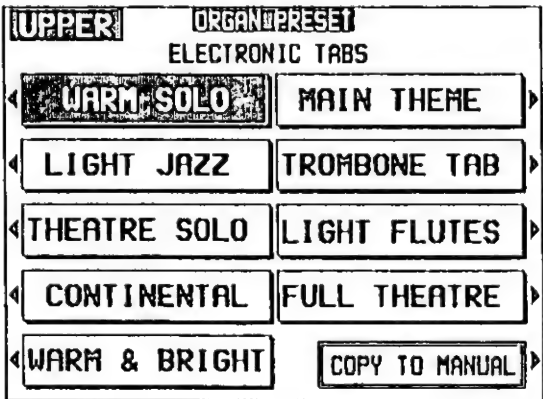
 - The selected sound is memorized independently for each organ type, so that whenever the **PRESET** sound is selected for the same organ type, the sound you chose is automatically available.

4. If necessary, repeat steps 2 and 3 to select a **PRESET** sound for the other keyboard.

 - The tab buttons (with feet indications) and effect buttons (except for the **SUSTAIN** button) do not work for the **PRESET** sounds. If you wish to modify the sound, first make a copy of the **PRESET** sound (see below), and then modify the copy.



- The display looks similar to the following.



- Copy a PRESET sound

When you copy a **PRESET** sound to the **MANUAL** memory, you can modify the copy as desired.

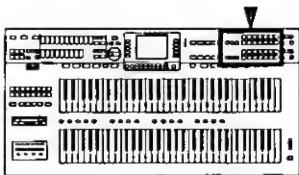
Note: When you copy a sound to the **MANUAL** memory, any sound which was previously copied to the memory is erased.

1. Select a **PRESET** sound.

2. Press the **COPY TO MANUAL** button.

 - A copy of the selected **PRESET** sound is stored in the **MANUAL** memory. You can now change the characteristics of the sound in the **MANUAL** memory. (Refer to page 36.)

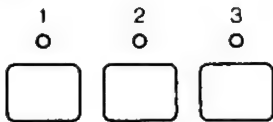
Selecting Sound part sounds



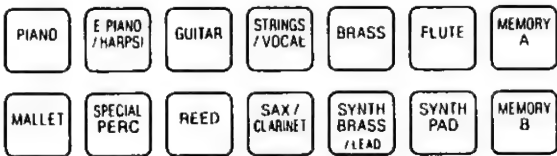
Select from a variety of sounds for the **SOUND 1, 2 and 3** parts of the upper keyboard and lower keyboard.

Sound

1. In the **UPPER SOUND GROUP** or **LOWER SOUND GROUP**, press the **1, 2** or **3** button to select a part.

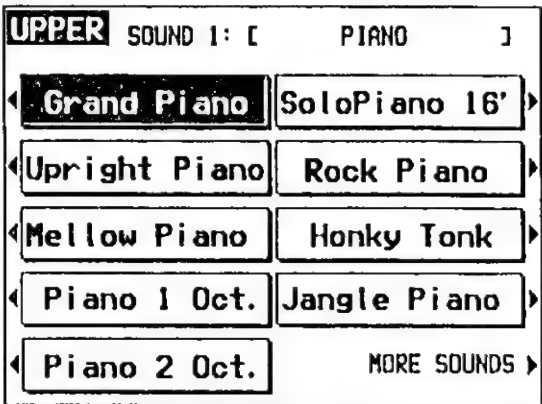


2. In the **UPPER SOUND GROUP** or **LOWER SOUND GROUP**, press one of the sound buttons to select a sound group.



- A list of sounds available for each sound group can be found in the separate "REFERENCE GUIDE" provided.
- **MEMORY A** and **MEMORY B** are reserved for storing sounds you modify. (Refer to page 128.)

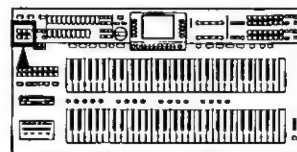
3. Select the desired sound from the list on the display.



Press the **MORE SOUNDS** button to see a different part of the list.

- The selected sound is memorized independently for each sound group of each part, so that whenever the sound group is selected for the same part, the sound you chose is automatically available.
4. Repeat steps 1 to 3 to select the sound for the other parts.
- To play the sound selected for a part on the respective keyboard, turn on the corresponding **SOUND** button in the **ORCHESTRAL CONDUCTOR**. You can combine sounds by turning on two or more buttons in the **ORCHESTRAL CONDUCTOR** at the same time.
 - You can adjust the volume of each part. (Refer to page 29.)
 - Press the **EXIT** button to go back to the previous display.

Selecting the bass part sound

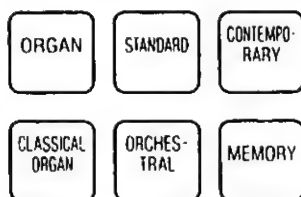


A variety of sounds for you to choose from is also available for the bass part (pedal keyboard).

Bass

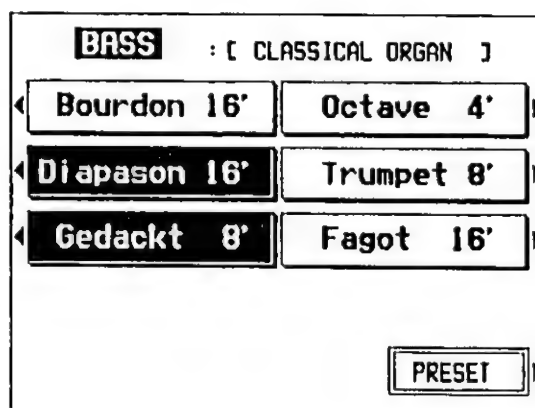
1. In the **BASS PEDALS** section, select a sound group.

BASS PEDALS



- A list of sounds available for each sound group can be found in the separate "REFERENCE GUIDE" provided.
- **MEMORY** is reserved for storing sounds you modify. (Refer to page 128.)

2. Select the desired sound from the list on the display.



- For non-organ-type sounds, you can use the **OCTAVE** button to select the octave. The standard is 8', so the pitch is lowered by one octave when 16' is selected.
- For organ-type sounds (**ORGAN** and **CLASSICAL ORGAN**) you can combine multiple sounds on the display (BASS TABS) to create a different sound. Or, when you press the **PRESET** button, you can select the **PRESET** sound.
- The selected sound is memorized independently for each sound group, so that whenever the sound group is selected, the sound you chose is automatically available.
- Press the **EXIT** button to go back to the previous display.

Mixing sounds

You can combine bass sounds of different groups so that they are produced simultaneously.

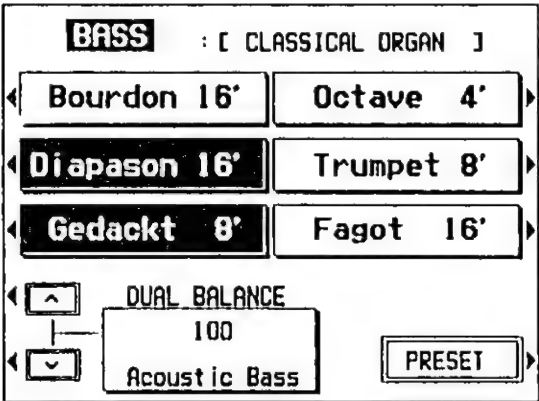
Press the **ORGAN** button, or the **CLASSICAL ORGAN** button, and another **BASS PEDALS** sound button at the same time to turn them both on.

- The **ORGAN** sound and **CLASSICAL ORGAN** sound cannot be mixed.
- When sounds are combined, you can change the nuance of the organ-type sound by turning the sounds shown on the display on or off.

■ Volume balance

When mixing an organ-type sound with another bass sound, the volume balance between the two sounds can be adjusted by changing the volume of the non-organ-type sound.

1. Simultaneously press the buttons for the two sounds.

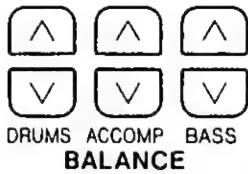


2. Use the ^ and v buttons, to adjust the volume of the non-organ-type bass sound (0 to 127).
- When set to 100, the volume of the organ-type sound is the same as the volume of the other sound.

Adjust the volume

Adjust the volume of the **BASS** part in relation to the other parts.

Use the **BASS** buttons in the **BALANCE** section to adjust the volume of the **BASS** part (0 to 127).



- Each time the ^ button is pressed, the volume increases, and each time the v button is pressed, the volume decreases.
- While the volume is being adjusted, the balance setting display is shown. A few seconds after you change the setting, the display returns to the previous display.

Lower keyboard bass

You can add the bass sound to the lowest note played on the lower keyboard. This means that you can produce the bass part sound without actually playing the pedal keyboard.

Select from two methods.

■ TO LOWER

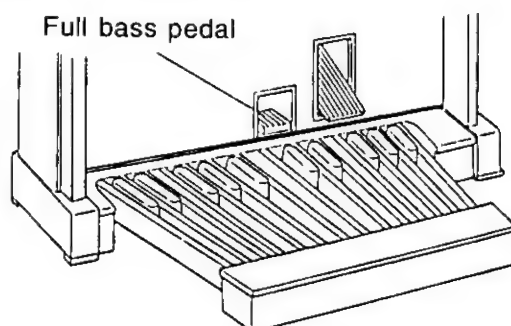
In the **BASS PEDALS** section, press the **TO LOWER** button to turn it on.



- The bass sound is added to the lower keyboard sound as long as this button is on.
- To turn off this function, press the **TO LOWER** button again to turn it off.

■ Full bass pedal

Press the full bass pedal.



- The bass sound is added to the lower keyboard as long as this pedal is depressed.
- If this pedal is depressed when the **TO LOWER** button is on, the **TO LOWER** button turns off automatically when the pedal is released.
- You can assign a different function (bass solo, etc.) to the full bass pedal. (Refer to page 126.)

Add effects to the Sound and Bass part sounds

Various effects add character to the **SOUND** and **BASS PEDALS** sounds.

DIGITAL EFFECT

DIGITAL EFFECT gives the sound richness and enhances your performance.



1. Turn on the part button for a sound (1, 2 or 3 in the **UPPER** or **LOWER SOUND GROUP**).
 - This step is not necessary when you are adding the **DIGITAL EFFECT** to the **BASS** part.
2. Press the **DIGITAL EFFECT** button to turn it on.

3. Repeat steps 1 and 2 for other parts as desired.

- The **DIGITAL EFFECT** differs depending on the selected sound.
- The on or off status of the **DIGITAL EFFECT** is preset for each sound, so that the **DIGITAL EFFECT** turns on when certain sounds are selected.
- The **DIGITAL EFFECT** settings can be changed. (Refer to page 139.)

DSP EFFECT (SOUND parts)

You can change the quality of the sound.



1. Turn on the part button for a sound (1, 2 or 3 in the **UPPER** or **LOWER SOUND GROUP**).

2. Press the **DSP EFFECT** button to turn it on.

3. Repeat steps 1 and 2 for other parts as desired.

- The on or off status of the effect is memorized for each part.
- The **DSP EFFECT** settings can be changed. (Refer to page 120.)

SUSTAIN

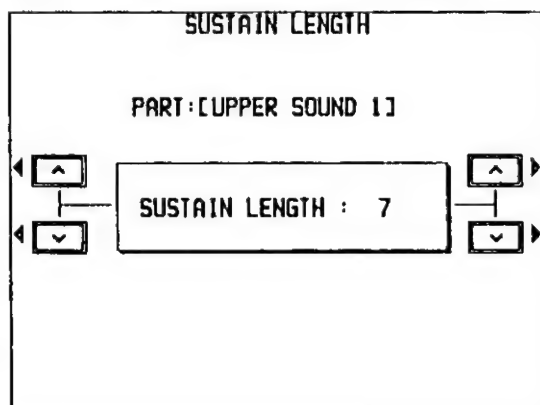
SUSTAIN is the gradual fading out of musical tones after the key is released.



1. If adding this effect to a **SOUND** part, turn on the button for the part.

2. Press the corresponding **SUSTAIN** button to turn it on.

- The display changes to the following.



3. Use the \wedge and \vee buttons to adjust the length of the sustain (1 to 8).

- A few seconds after changing the setting, the display returns to the previous display.

4. Repeat steps 1 to 3 for other parts as desired.

- The on or off status of the **SUSTAIN** is memorized for each part.
- The **SUSTAIN** effect differs depending on the selected sound.

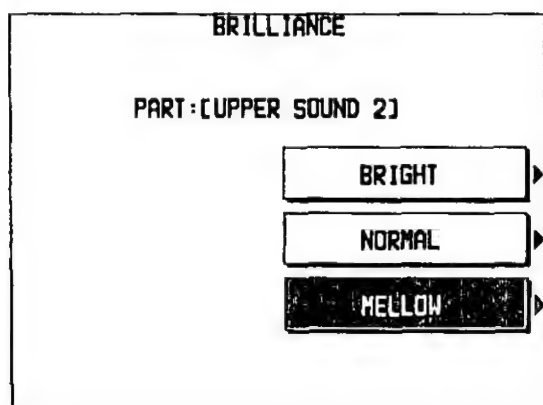
BRILLIANCE

Change the brightness of the sound.



BRILLIANCE

1. If adding this effect to a **SOUND** part, turn on the button for the part.
 2. Use the corresponding **BRILLIANCE** ^ and v buttons to change the setting.
 - The display changes to the following.
 3. Repeat steps 1 and 2 for other parts as desired.
- The **BRILLIANCE** setting is memorized for each part.
 - This effect differs depending on the selected sound and on the keyboard section.



- You can also specify the brightness with the buttons to the right of the display.

BRIGHT: The sound is brighter.

NORMAL: Standard brightness.

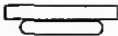
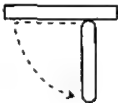
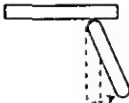
MELLOW: The sound is mellow.
- A few seconds after changing the setting, the display returns to the previous display.

Other effects

Other effects give you complete control over the way your performance sounds. For example, the knee lever lets you instantly turn the sustain on and off-during your performance, and you can easily add reverb to all the sounds of your instrument.

Knee lever

You can operate the knee lever located under the keyboards with your right knee to turn the **SUSTAIN** effect on and off quickly while you play.

Knee lever	Sustain effect
 Raised position	The SUSTAIN effect for each part is enabled/disabled according to the on/off status of the SUSTAIN button for each part.
 Lowered position (stand-by)	The SUSTAIN effect is standing by for those parts whose SUSTAIN button status is on.
 Pressed to the right (on)	The SUSTAIN effect is applied to the parts whose SUSTAIN button status is on.

- You can assign a different function to the knee lever. (Refer to page 126.)

DIGITAL REVERB

DIGITAL REVERB applies a reverberation effect to the sound of the whole instrument, including the automatic rhythm sounds.

Press the **DIGITAL REVERB** button to turn it on.

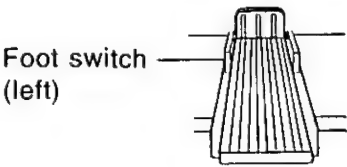


- The display can also be used to set this effect to on or off for each part separately (effective when the **DIGITAL REVERB** is on).
- The type and depth of the reverberation can be adjusted. (Refer to page 117.)

Glide

The foot switch is used as a glide control.

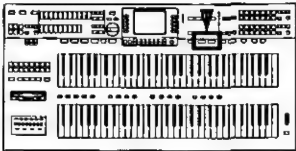
1. Press the foot switch (left foot switch) to the left with the side of your foot.



- The pitch of the instrument is lowered by about one semitone.
- 2. Release the foot switch.
 - The pitch returns to normal.
 - A fast glide effect is applied when the foot switch is released quickly.
 - You can adjust the pitch range of the glide effect, and specify whether the glide effect works for the lower keyboard. (Refer to page 120.)
 - You can assign a different function to this foot switch. (Refer to page 126.)
- The glide effect does not function for the pedal keyboard sounds and for some other sounds.

Practical applications

Automatic sound and effect settings

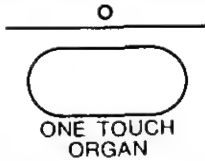


The sound and effect settings (registration) for each keyboard can be executed automatically in seconds. A great many automatic registrations are available for you to choose from.

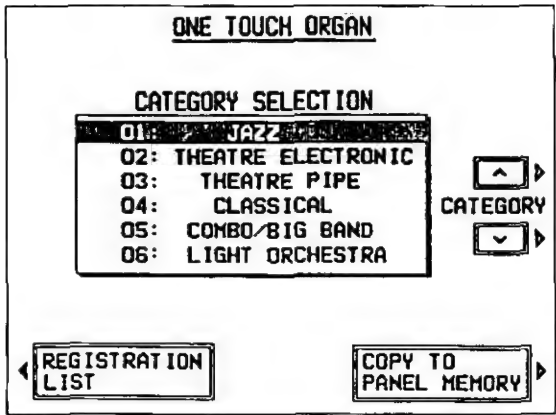
ONE TOUCH ORGAN

A wide variety of **ORGAN** registrations has been prepared for automatic panel setup.

- 1. Press the **ONE TOUCH ORGAN** button to turn it on.

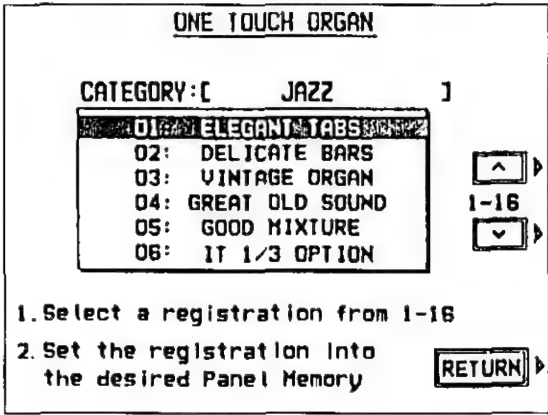


- The display looks similar to the following.



- 2. Use the \wedge and \vee buttons to select the category (performance style) (01 to 06).

- 3. Press the **REGISTRATION LIST** button.
 - The display looks similar to the following.



- 4. Use the 1-16 \wedge and \vee buttons to select the name of a registration (01 to 16).
 - The sounds and effects for each keyboard, the rhythm and various other panel settings which are suitable for the registration you chose are automatically selected.
 - Play and listen to the sound. If you like the combination, store the registrations in the **PANEL MEMORY** for one-touch recall. (See below.)
 - When the **ONE TOUCH ORGAN** function is used, the **ACCOMP 1, 2 and 3** buttons turn off.

■ Copy to the PANEL MEMORY

The registration contents of the selected category can be copied to the **PANEL MEMORY** buttons (page 53) for easy recall.

Notes

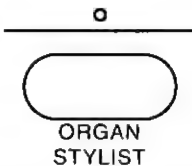
- When this procedure is executed, any previously stored contents of the **PANEL MEMORY** buttons are replaced by the registrations of the selected category.

1. Select the category.
2. Press the COPY TO PANEL MEMORY button.
 - A confirmation display appears. Press the YES button to execute the function, or press the NO button to cancel the function.
 - The automatic registrations are copied to the **PANEL MEMORY 1 to 16** buttons.

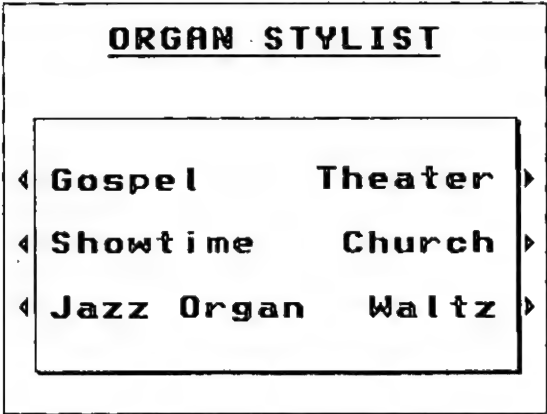
ORGAN STYLIST

Automatic settings for the **ORGAN** styles are also available to choose from.

1. Press the **ORGAN STYLIST** button to turn it on.



- The display looks similar to the following.

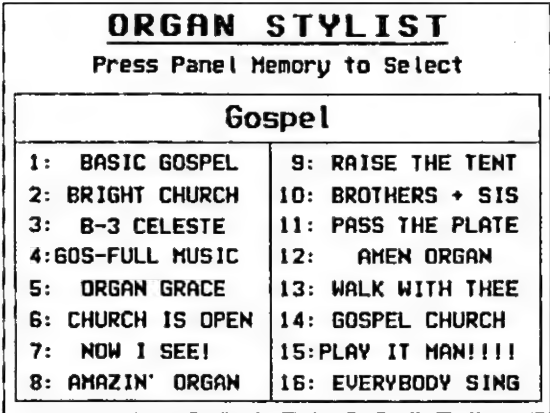


2. Use the buttons to the left and right of the display to select a style category.
 - A confirmation display appears. Press the YES button to execute the function, or press the NO button to cancel the function.

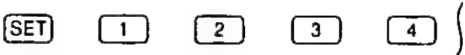
Notes

- When this procedure is executed, any previously stored contents of the **PANEL MEMORY** buttons are replaced by the registrations of the selected category.

- When the YES button is pressed, a list of styles is shown on the display (1 to 16).

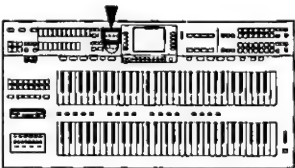


3. Use the **PANEL MEMORY** buttons to select a style (1 to 16).



- The name of the selected style is shown on the display for a few seconds.
- The sounds and volume balances for each keyboard, rhythm, accompaniment and tempo, etc. suitable for the style you chose are automatically selected.
- Press **ORGAN STYLIST** button to turn it off to go back to the previous display.
- The **PANEL MEMORY** mode changes automatically to the EXPAND mode. When you press the **ORGAN STYLIST** button to turn it off, the **PANEL MEMORY** mode returns to the previous mode. (Refer to page 53.)

Transpose



The **TRANPOSE** buttons are used to change the key (pitch) of the entire instrument in semi-tone steps across an entire octave.

Suppose you learn to play a song—in the key of C, for example—and decide you want to sing it, only to find it's either too high or too low for your voice. Your choice is to either learn the song all over again, in a different key, or to use the **TRANPOSE** feature.

Adjust the key with the **TRANPOSE** buttons (**UP** and **DOWN**).



Each press of the **UP** button changes the key as follows: D^b → D → E^b → E → F → F[#].
Each press of the **DOWN** button changes the key as follows: B → B^b → A → A^b → G.

- If the two buttons are pressed at the same time, the key returns to C.
- When the **TRANPOSE** function is active, the indicator for the **UP** or **DOWN** button remains lit.
- When the **TRANPOSE** function is active, the transposed key is shown on the display.

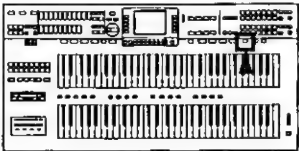
U/L ORGAN SOUND	
GROUP: ELECTR. TABS	UPPER [SOUND 1] Grand Piano
TYPE: Standard	LOWER [SOUND 1] E. Piano I
RHYTHM Organ Fox	BASS PEDAL SOUND Organ
J = 146	
< D >	
LOWER BALANCE	UPPER BALANCE

Actual key

<Example: transposed to D>

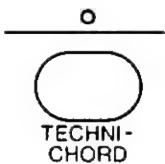
Played keys	Notes that sound
C major	D major

Techni-chord



TECHNI-CHORD transfers the chord notes you play on the lower keyboard to each melody note you play on the upper keyboard.

- 1. Press the **TECHNI-CHORD** button to turn it on.



- 2. Play the example below, playing the chords on the lower keyboard and the melody on the upper keyboard.

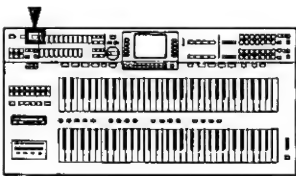
Left hand (chord)

Right hand (melody)

- The melody you play on the upper keyboard is automatically played in chords which are based on the chords you play on the lower keyboard.
- **TECHNI-CHORDs** cannot be played using the lowest two octaves of the upper keyboard.
- This feature is very effective when used with the **AUTO PLAY CHORD**. (Refer to page 59.)
- The display can be used to select the desired harmony style. (Refer to page 119.)

- When the **AUTO PLAY CHORD MEMORY** function is set to on, **TECHNI-CHORD** will continue to add the selected harmony to the notes played on the upper keyboard even after the chord on the lower keyboard is released. This feature is not affected by the **AUTO PLAY CHORD** on/off setting.

BGS Background Sound

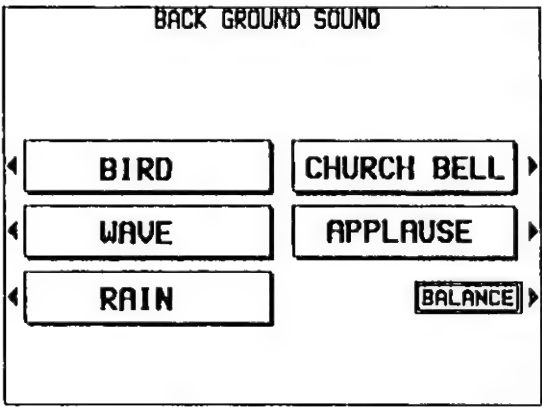


Various preset background sounds such as the chirping of birds and the sound of waves are available. Use the background sounds to give your music that special atmosphere.

1. Press the **BGS** button to turn it on.



- The display changes to the following.



2. Press the button for the desired background sound.

- The selected sound is immediately produced.
- The background sounds can be mixed when two buttons are pressed at the same time.
- A few seconds after making your selection, the display returns to the previous display.

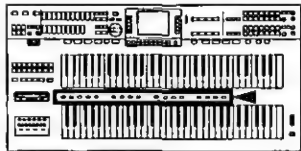
3. To turn off the background sound, press the **BGS** button again.

- The background sound dies out slowly (FADE OUT).

■ Volume

On the BACK GROUND SOUND display, press the **BALANCE** button to access the volume-setting display. Use the BGS buttons to adjust the volume.

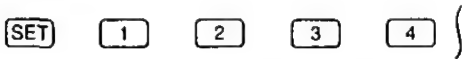
Panel Memory



PANEL MEMORY stores the panel setups of your instrument up to 16, allowing you to make complex changes at the touch of a single button.

1. Select the sounds, effects and volumes for all the parts.

2. With the **SET** button held down, press one of the numbered buttons of the **PANEL MEMORY**.
- After recalling the settings by pressing a **PANEL MEMORY** number button, you can change the panel settings manually, but the memory contents of the **PANEL MEMORY** remain unchanged until you store them again.



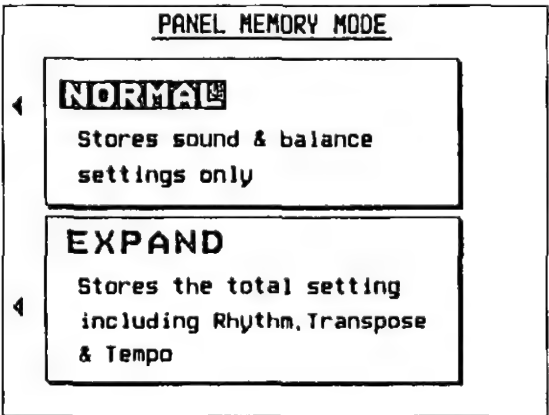
- The current settings are now stored in the specified number button. To recall the settings, just press the respective number button in the **PANEL MEMORY**.

■ PANEL MEMORY mode

You can define which panel settings are stored when the **PANEL MEMORY** is used.

1. Press and hold the **SET** button for a few seconds.

• The display changes to the following.



2. Select the mode (NORMAL or EXPAND).

NORMAL: Stores sound and volume balance settings, etc.

EXPAND: Stores all instrument settings, including rhythm, **TRANSPOSE** status, tempo, etc.

• After a few seconds, the display exits the setting mode.

Suggestions for using PANEL MEMORY

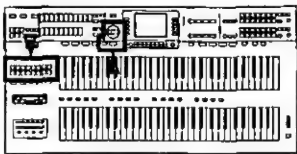
- The initial factory setting of the **PANEL MEMORY** contains various settings which you may choose to use or to alter to your own taste. These can be restored at any time by initializing the **PANEL MEMORY**. (Refer to page 154.) Selecting the EXPAND mode will allow you to make full use of the initial factory settings of the **PANEL MEMORY**.

• You can change from one **PANEL MEMORY** to another by using a foot switch. (Refer to page 125.)

Part II Playing the rhythm

The rhythm section enhances the capabilities of your instrument with features such as automatic performance of the preset rhythm patterns and accompaniment patterns.

Selecting rhythms



After first selecting a **RHYTHM GROUP**, choose the desired rhythm from the display.

Select a rhythm.

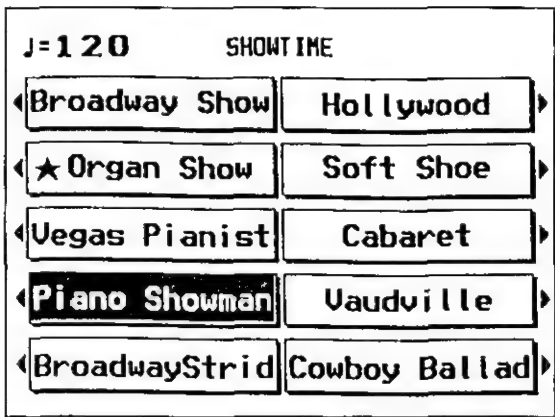
1. In the **RHYTHM GROUP** section, select a rhythm group.

RHYTHM GROUP



- A list of rhythms available for each rhythm group can be found in the separate "REFERENCE GUIDE" provided.
 - **COMPOSER A** and **COMPOSER B** are reserved for storing rhythms you create yourself. (Refer to page 93.)
2. Select the desired rhythm from the list on the display.

- Rhythms marked with a ★ are especially effective for an **AUTO PLAY CHORD** performance with **ORGAN** sounds.
- The selected rhythm is memorized independently for each rhythm group, so that whenever a **RHYTHM GROUP** button is pressed, the rhythm you chose is automatically available.
- Press the **EXIT** button to go back to the previous display.

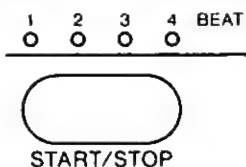


Start the rhythm

There are two ways to start the rhythm.

■ Immediate rhythm start

1. Select a rhythm.
2. Press the **START/STOP** button to turn it on.

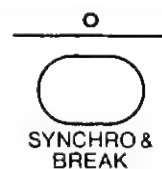


- The selected rhythm pattern immediately begins to play.
- You can stop the rhythm by pressing the **START/STOP** button again to turn it off.
- During the rhythm performance, the **BEAT** indicators above the **START/STOP** button light to indicate the beat. On the first beat of the measure, the red indicator lights. On the second and succeeding beats of the measure, the green indicators light in order.

■ Synchronized start

With the synchronized start feature, the rhythm pattern starts when you play a key on the lower keyboard or pedal keyboard.

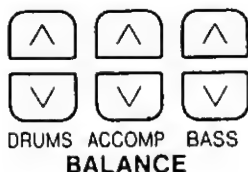
1. Select a rhythm.
2. Press the **SYNCHRO & BREAK** button to turn it on.



3. Play a key on the lower keyboard or a pedal on the pedal keyboard.
- The rhythm pattern begins to play.
 - You can stop the rhythm by pressing the **START/STOP** button to turn it off.

Adjust the volume

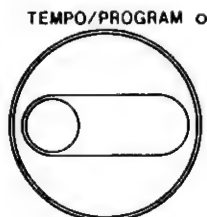
The volume of the rhythm is adjusted with the **DRUMS** buttons in the **BALANCE** section.



- While the volume is being adjusted, the balance-setting display is shown.

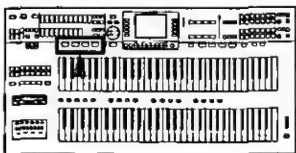
Adjust the tempo

The tempo of the rhythm pattern is adjusted with the **TEMPO/PROGRAM** dial.



- The tempo is shown on the display as a numerical value (♩ = 40 to 300).
- When the **TEMPO/PROGRAM** indicator is lit, it means that one of the various function-setting modes is active and the **TEMPO/PROGRAM** dial is not currently available for adjusting the tempo.

Playing the rhythm

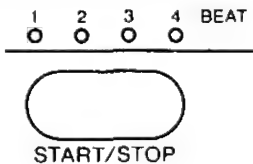
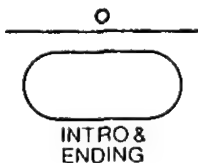


Intro, fill-in and ending patterns fitting each different rhythm pattern are permanently recorded in your instrument, thus allowing a versatile rhythm performance.

INTRO

Begin the rhythm performance with an intro pattern.

1. Press the **INTRO & ENDING** button to turn it on.
2. Press the **START/STOP** button to start the rhythm.

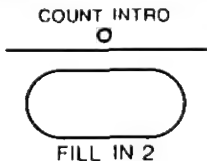


- An intro pattern is played, after which the normal rhythm pattern begins.

COUNT INTRO

You can begin the rhythm performance with a one-measure count.

1. Press the **COUNT INTRO (FILL IN 2)** button to turn it on.
2. Press the **START/STOP** button to start the rhythm.

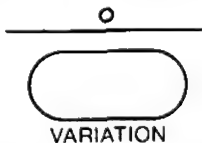


- A one-measure count is played, after which the normal rhythm pattern begins.

VARIATION

Each rhythm pattern also has a variation pattern. Add drama to your performance by switching to the variation pattern at climactic points in the melody.

1. Select a rhythm and press the **START/STOP** button.
2. Press the **VARIATION** button to turn it on.



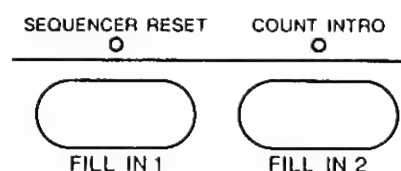
- The rhythm changes to a flashier pattern.
- Press the **VARIATION** button again to turn it off and go back to the normal rhythm pattern.
- This button does not function when the **MUSIC STYLE ARRANGER** is on. (Refer to page 65.)

FILL IN

You can insert a fill-in pattern any time during the rhythm performance. Choose from two different fill-in patterns.

1. Select a rhythm and press the **START/STOP** button.

2. Press the **FILL IN 1** or **FILL IN 2** button.



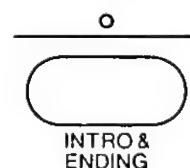
- A fill-in pattern is heard immediately for the remainder of the measure.
- When a **FILL IN** button is pressed on the last beat of the measure, the fill-in pattern continues to the end of the following measure.

ENDING

Finish the rhythm performance with an ending pattern.

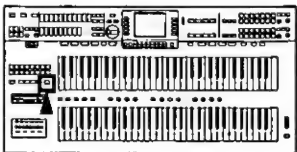
1. Select a rhythm and press the **START/STOP** button.

2. Press the **INTRO & ENDING** button to turn it on.



- An ending pattern is produced, and then the rhythm performance stops.
- If you accidentally press the **INTRO & ENDING** button in the middle of the tune, you can press the **FILL IN 1** or **FILL IN 2** button. The ending pattern stops, and a fill-in pattern is produced, after which the normal rhythm performance continues.

Keyboard Percussion

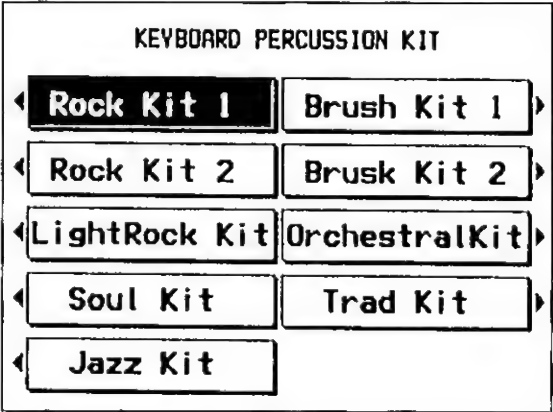


A complete set of percussion instruments and other special sounds is at your fingertips. Use the lower keyboard to play the percussion performance.

1. Press the **KEYBOARD PERCUSSION** button to turn it on.
2. Select the **KIT** of percussion instruments from the list on the display.

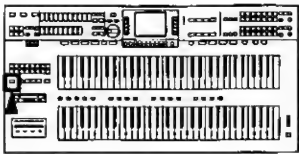


- The display looks similar to the following.



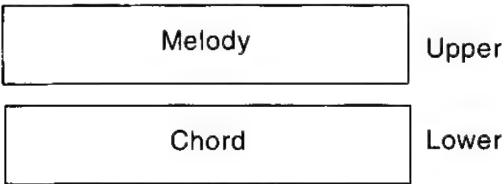
3. Play the lower keyboard.
- Percussion instrument sounds are produced by the lower keyboard keys as indicated by the picture code above each key. For further explanation, refer to the separate "REFERENCE GUIDE" provided.
 - In the "Orchestral kit," the arrangement of percussion instruments is different.

Auto Play Chord



Simply by playing a chord on the lower keyboard, the **AUTO PLAY CHORD** function automatically plays an accompaniment pattern which matches perfectly the selected rhythm. With a real accompaniment as a background, you can concentrate on playing the melody.

How the AUTO PLAY CHORD works



When an **AUTO PLAY CHORD** mode is selected, an automatic accompaniment which matches the rhythm you have chosen is played in the chord which you specify on the lower keyboard. The melody is played on the upper keyboard.

- The accompaniment pattern of the **AUTO PLAY CHORD** is composed of five parts: **DRUMS, BASS, ACCOMP 1, ACCOMP 2** and **ACCOMP 3**.

Playing chords

You can choose from one of the following three **AUTO PLAY CHORD** modes.




■ ONE FINGER mode

Press a key on the lower keyboard to specify the root note. The major chord (on the lower keyboard) and the bass note (on the pedal keyboard) corresponding to this root note are automatically played in an accompaniment pattern.




Example: C chord



Minor, seventh and minor seventh chords are also easily produced as shown below.

minor chord	seventh chord	minor seventh chord
Play the root note on the lower keyboard and any black pedal.	Play the root note on the lower keyboard and any white pedal.	Play the root note on the lower keyboard and any black pedal and white pedal, at the same time.
		

You can also use just the lower keyboard to specify minor, seventh and minor seventh chords.

minor chord	seventh chord	minor seventh chord
Play the root note plus a black key to the left of it.	Play the root note plus a white key to the left of it.	Play the root note plus a black key and a white key to the left of it.
Example: Cm 	Example: C7 	Example: Cm7 

■ FINGERED mode

Indicate the chord by actually playing the chord keys on the lower keyboard. In the FINGERED mode, the **AUTO PLAY CHORD** recognizes more chord types, and thus the scope of your performance expression is expanded.

Example: C chord



- The **AUTO PLAY CHORD** can distinguish the following played chords for each key (C is given as an example): C, C7, CM7, Caug, Cm, Cm7, Cdim7, Cm7^{b5}, CmM7, Csus4, etc.

■ PIANIST mode

Indicate the chord by actually playing the chord keys on the lower keyboard. In addition to the chords recognized in the FINGERED mode, the **AUTO PLAY CHORD** also recognizes 9th and 13th chords.

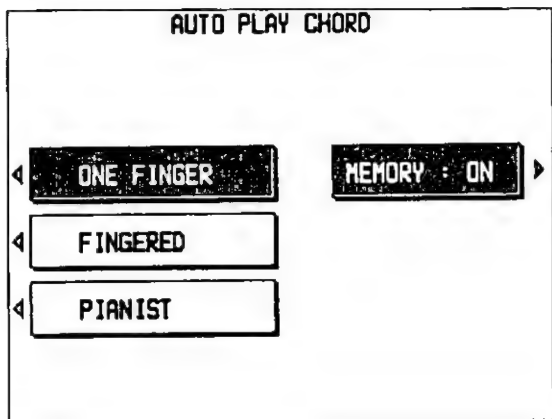
- If a pedal is pressed while you are playing a chord in the FINGERED and PIANIST mode, only the bass pattern is produced in the key of the pressed pedal, thus making it possible to play chords such as DonC.

How the use the AUTO PLAY CHORD

- 1. Select the desired rhythm and sounds, and set the tempo.
 - Rhythms marked with a ★ are especially effective for an **AUTO PLAY CHORD** performance with **ORGAN** sounds.
- 2. Press the **AUTO PLAY CHORD** button to turn it on.



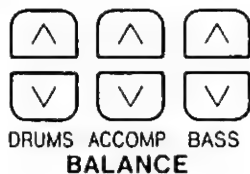
- The display looks similar to the following.



- 3. Use the buttons to the left of the display to select an **AUTO PLAY CHORD** mode.
 - After a few seconds, the display returns to the previous display.
 - When the **MEMORY** is set to **ON**, even when the keys are released, the chord is memorized and the accompaniment continues to play until you specify another chord.
- 4. Press the **START/STOP** button to begin the rhythm.
 - You can also start the rhythm by playing the lower keyboard or pedal keyboard (synchronized start). (Refer to page 55.)
- 5. Specify the chord on the lower keyboard.
 - An accompaniment pattern in the specified chord begins to play. Play the melody on the upper keyboard.
 - When you use **VARIATION**, **FILL IN**, **INTRO** and **ENDING**, the automatic accompaniment is also used in these patterns.
 - When the rhythm is off, if the **AUTO PLAY CHORD** button is on and a chord is specified, the specified root note and chord notes are produced.
- 6. To stop the automatic accompaniment, press the **START/STOP** button.

Adjust the volume

The volume for each part is adjusted with the respective **DRUMS**, **ACCOMP** or **BASS** buttons in the **BALANCE** section.

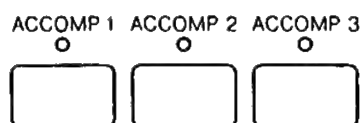


- While the volume is being adjusted, the balance setting display is shown.
- The volumes for the **ACCOMP 1**, **2** and **3** parts can be adjusted independently. (Refer to page 30.)

Practical applications

ACCOMP parts

The **ACCOMP** part of the automatic accompaniment is composed of three different parts. You can change the accompaniment by turning any or all of the three parts on or off.



- If all the **ACCOMP** parts are turned off, the **ACCOMP** part sound is not produced.

DYNAMIC ACCOMP

DYNAMIC ACCOMP is a function which changes each accompaniment pattern of the **AUTO PLAY CHORD**.

1. Press the **DYNAMIC ACCOMP** button to turn it on.



2. Play the instrument with one of the **AUTO PLAY CHORD** modes on.

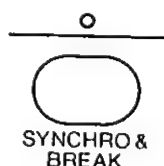
- Depending on how hard the keyboard keys are played or how complicated the melody phrase, for example, each **ACCOMP** part changes.

BREAK function

With the break function, the rhythm starts when the lower keyboard is played and stops when the fingers are removed from the keys.

1. Turn on the **AUTO PLAY CHORD** button and select a mode.
 - At this time, the **MEMORY** should be set to **OFF**.

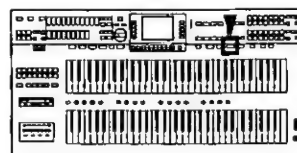
2. Press the **SYNCHRO & BREAK** button to turn it on.



3. Specify a chord on the lower keyboard.
 - The automatic accompaniment begins to play (synchronized start).

4. Release the lower keyboard keys.
 - The automatic accompaniment stops. When the keys are pressed again, the automatic accompaniment starts from the first beat.

Automatic settings

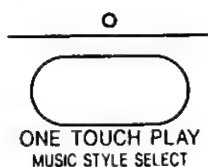


With the automatic settings, the panel settings change depending on the rhythm or music style you select. This lets you get a great sound straight away, even if you are playing this instrument for the first time.

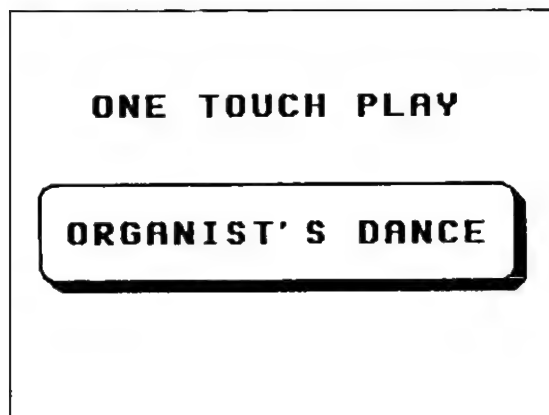
ONE TOUCH PLAY

Set up your instrument with a combination of sounds and balances suitable for your selected rhythm style.

1. Select a rhythm pattern.
 - Do not select a rhythm from the **COMPOSER A** or **COMPOSER B** group.
2. Press the **ONE TOUCH PLAY** button until its indicator goes out.
3. Play the keyboards.
 - When a chord is specified on the lower keyboard, the automatic accompaniment begins to play. Play the melody on the upper keyboard.



- The display looks similar to the following.



- The **AUTO PLAY CHORD** and the **SYNCHRO & BREAK** button turn on, and the sounds, effects and tempo are automatically set.

Suggestions for using ONE TOUCH PLAY

- Press the **INTRO & ENDING** button before you play for a professional-sounding introduction.
- Use the **ONE TOUCH PLAY** registration as a starting point for your own registration.
- Alter the sounds, balance and tempo to your own taste and store your new registration in the **PANEL MEMORY** for future use. (Refer to page 53.)

MUSIC STYLE SELECT

With this feature, the panel settings are automatically set to match the selected music style.

1. Press the **ONE TOUCH PLAY (MUSIC STYLE SELECT)** button momentarily.
 - The display looks similar to the following.



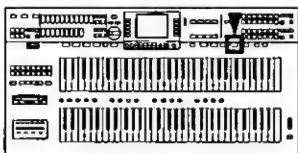
2. In the **RHYTHM GROUP** section, select a rhythm group.

3. Use the \wedge and \vee buttons to select a music style.
 - The **AUTO PLAY CHORD** and the **SYNCHRO & BREAK** button turn on, and the sounds, effects, rhythm and tempo which are best suited for the selected music style are automatically selected.
4. Play the keyboards.
 - When a chord is specified on the lower keyboard, the automatic accompaniment begins to play. Play the melody on the upper keyboard.
 - To return to the normal performance display, press the **ONE TOUCH PLAY** button to turn it off, or press the **EXIT** button.

Suggestions for using MUSIC STYLE SELECT

- Press the **INTRO & ENDING** button before you play for a professional-sounding introduction.
- Use the **MUSIC STYLE SELECT** registration as a starting point for your own registration.
- Alter the sounds, balance and tempo to your own taste and store your new registration in the **PANEL MEMORY** for future use. (Refer to page 53.)

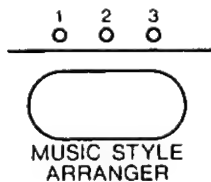
Music Style Arranger



The **MUSIC STYLE ARRANGER** helps you make professional registration changes during your performance. Select between three contrasting registrations at the touch of a button. The **MUSIC STYLE ARRANGER** will alter the accompaniment in character with the registration change, creating a polished-sounding arrangement.

How to use the MUSIC STYLE ARRANGER

1. Select a rhythm pattern.
2. Press the **MUSIC STYLE ARRANGER** button to select the style (1, 2 or 3) you want at the beginning of your performance.

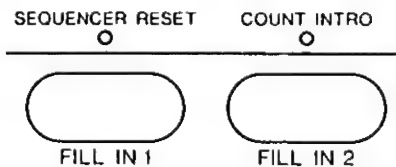


- 1: Simple pattern
- 2: Normal pattern
- 3: Flashy pattern

- Each time the **MUSIC STYLE ARRANGER** button is pressed, the style indication changes as follows: 1 → 2 → 3 → off.
- The panel settings change according to the selected rhythm and music style. The **AUTO PLAY CHORD** and the **SYNCHRO & BREAK** button turn on. When a key on the lower keyboard is pressed, the automatic accompaniment starts to play immediately.
- The **MUSIC STYLE ARRANGER** includes the rhythm **VARIATION** setting. Therefore, the **VARIATION** button does not function when the **MUSIC STYLE ARRANGER** is on.

How to change the music style during your performance

While you are playing your instrument with the **MUSIC STYLE ARRANGER** on, press the **FILL IN 1** or **FILL IN 2** button.

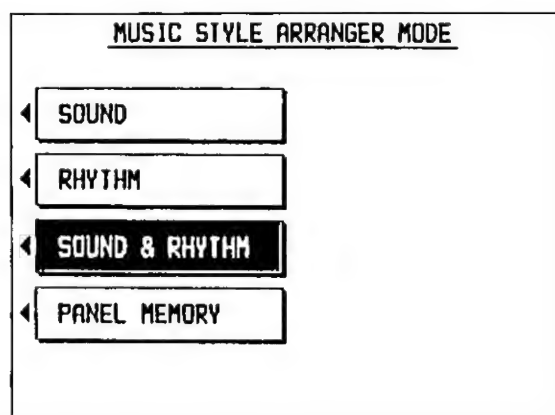


- Each time the **FILL IN 1** button is pressed, the **FILL IN 1** pattern plays, and then the music style changes in the 3 → 2 → 1 order. And each time the **FILL IN 2** button is pressed, the **FILL IN 2** pattern plays, and then the music style changes in the 1 → 2 → 3 order.

■ MUSIC STYLE ARRANGER mode

You can define which panel settings change when the **MUSIC STYLE ARRANGER** is on and a **FILL IN** button is pressed.

1. Press and hold the **MUSIC STYLE ARRANGER** button for a few seconds.
 - The display changes to the following.



2. Select the mode.

SOUND

Only the sound changes.

RHYTHM

Only the rhythm changes.

SOUND & RHYTHM

Both the sound and rhythm change.

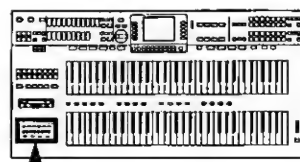
PANEL MEMORY

The **PANEL MEMORY** number changes.

- After a few seconds, the display exits the setting mode.
- You can also access this display with the **MEM & CTRL** button. (Refer to page 123.)

Part III Sequencer

Outline of the Sequencer



A sequencer records your performance in a similar way to a tape recorder. This instrument's **SEQUENCER** allows you to record in a variety of ways. You may want to record your entire performance in one go (especially if you are using **AUTO PLAY CHORD** to provide the accompaniment), or to build up a complex arrangement with several different parts playing together, like an orchestral score. This **SEQUENCER** has 16 tracks. This means that you can record 16 different parts. However, you don't have to use all 16 tracks. For some uses you may only need to use one or two tracks. The **SEQUENCER** enables you to edit your recorded performance. Unlike a tape recorder, you can change the sound or the tempo during playback, or correct wrong notes or timing errors.

SEQUENCER features

■ You can change the tempo without changing the pitch

When you record your performance at a slow tempo and play it back at a faster tempo, the pitch stays the same.

■ Consistent sound

Your performance is reproduced by a sound module as it reads digital data. So, unlike a recorded tape, the sound never deteriorates no matter how many times you play back your performance.

■ Edit your recorded performance

Comprehensive editing functions allow you to modify your recorded performance. Data can easily be erased, corrected or copied, providing an especially convenient tool for creating your original tunes.

■ Instant search

A recorded tape has to be rewound, but digital action means you can return to the beginning of your performance, or find any measure, instantly.

■ Save your performances on disks

All the data of your recorded performances can be stored on disks. The built-in Disk Drive also allows you to play commercially sold disks on your own instrument.

- Features and operation of the built-in Disk Drive are explained in Part V: Disk Drive (page 103).

Memory capacity

Expressed in terms of notes, the total number of notes which can be stored in all the tracks is about 28,000. The remaining memory available for recording is shown on the display as a percentage (MEMORY= %).

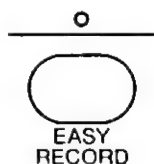
- When "Memory full!" appears on the display, no more data can be stored in the **SEQUENCER**.
- It is a good practice to save your recorded performances on disks before clearing any of the **SEQUENCER** memories. (Refer to page 107.)

SEQUENCER buttons

The buttons related to **SEQUENCER** recording and editing are briefly explained below.

■ EASY RECORD

Begin recording quickly without complicated set-up procedures.



EASY RECORD (page 69)

This feature allows you to bypass the more complex recording procedures so you can record and play back your performance quickly and easily.

- You can also record an accompaniment from the **AUTO PLAY CHORD**.

■ SEQUENCER REC

Record your performance just as you play it on the keyboard.



REALTIME RECORD (page 72)

Record your performance in up to 16 tracks and create your own orchestra or band.

■ STEP REC

Store the sounds note-by-note on the display.



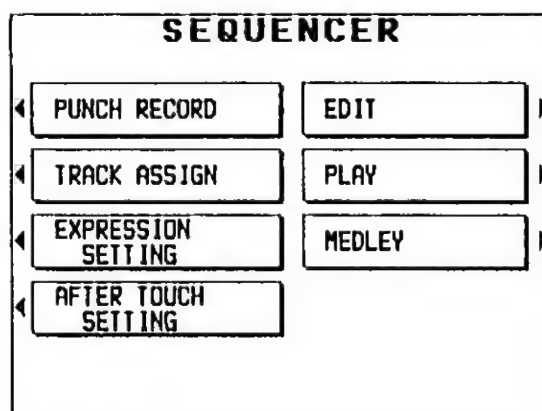
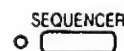
STEP RECORD (page 74)

For repeating patterns or those especially complicated phrases, this mode is convenient for recording the notes one-by-one.

- This mode can be used to store both the chord progression for the automatic accompaniment and the rhythm changes.

■ SEQUENCER

Edit the contents of your recorded performance. These features allow you to edit the contents of specific tracks or measures, and also to define the kind of playback you want.



PUNCH RECORD (page 89)

Correct a selected portion of your recorded performance.

TRACK ASSIGN (page 79)

Assign parts to up to 16 different tracks.

EXPRESSION SETTING (page 80)

Specify how pedal operation data is handled during recording or playback.

AFTER TOUCH SETTING (page 81)

Specify whether or not aftertouch data is recorded.

EDIT (page 82)

The following editing features are available.

- **SONG CLEAR:** Erase the recorded contents of all tracks.
- **TRACK CLEAR:** Erase the contents of a specific track.
- **TRACK MERGE:** Merge the recorded contents of two tracks and store in a third track.
- **QUANTIZE:** Correct the timing of the recorded performance.
- **MEASURE ERASE:** Erase the contents of specific measures.
- **MEASURE COPY:** Copy the contents of specific measures.

- **MEASURE DELETE:** Delete specific measures.
- **MEASURE INSERT:** Insert measures at a specified point.
- **VELOCITY CHANGE:** Modify velocity data (how hard the keys are played).

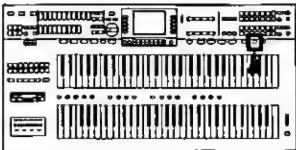
PLAY (page 91)

Adjust the settings related to playback operation.

MEDLEY (page 92)

Specify medley playback of songs recorded on a disk.

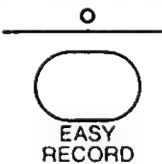
Easy Record



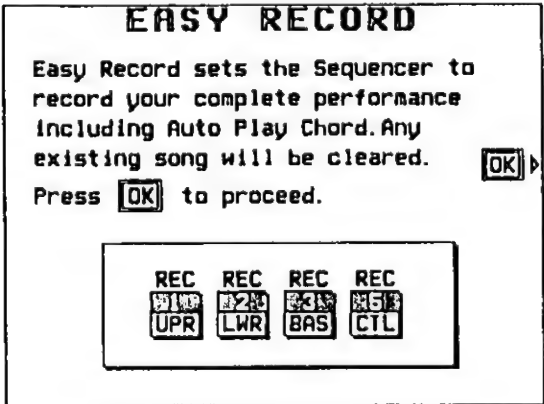
Suppose you are playing your instrument, and you wish to record and play back your performance to hear how it sounds. You can bypass the set-up procedures of the full-scale sequencer and begin recording quickly and easily.

Recording procedure

1. Set the desired sounds, effects, rhythms, etc.
2. Press the **EASY RECORD** button to turn it on.



- The display changes to the following.

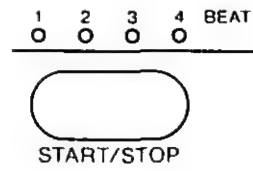
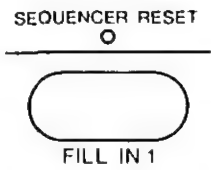


Note that when you select the **EASY RECORD** mode, the following settings are automatically effected.

- Tracks available for recording are selected as follows.
 - 1: **UPPER** part (Record the upper keyboard performance.)
 - 2: **LOWER** part (Record the lower keyboard performance.)
 - 3: **BASS** part (Record the pedal keyboard performance.)
 - 5: **CONTROL** part (Record rhythm changes, changes in the panel button status, etc.)
- 3. Press the **OK** button.
 - Note that when you press the **OK** button, the contents of all **SEQUENCER** tracks are erased (**SONG CLEAR**).
 - The display changes to the **REALTIME RECORD** display.
- 4. Begin your performance.
 - Recording begins as soon as you start the rhythm or play a keyboard.
- 5. When you have finished recording, press the **EASY RECORD** button to turn it off.

Playback

1. Press the **SEQUENCER RESET (FILL IN 1)** button.
2. Press the **START/STOP** button.



- Your recorded performance is played back automatically.

Sequencer parts

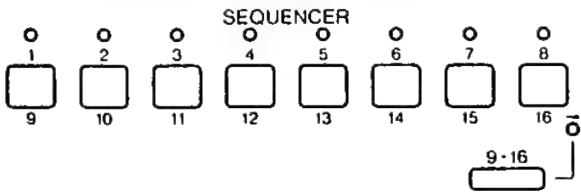
The **SEQUENCER** has 16 recording tracks. The track assignment and recorded contents are as outlined in the following table.

Part (Recorded keyboard)	Used for	Recorded contents
UPPER SOUND 1 to 3 [US1 to US3] (Upper keyboard)	Recording the respective keyboard performance (realtime/step)	<ul style="list-style-type: none">• Keyboard note data• Selected sounds, volumes• DIGITAL EFFECT, DSP EFFECT, SUSTAIN on/off• Aftertouch, knee lever on/off
LOWER SOUND 1 to 3 [LS1 to LS3] (Lower keyboard)		
UPPER ORGAN [UOR] (Upper keyboard)	Recording the ORGAN part performance (realtime/step)	<ul style="list-style-type: none">• Keyboard note data• Tab settings, volume• Tab tremolo, effect, SUSTAIN on/off• EXTRA TAB settings• EXTRA TAB tremolo, effect on/off
LOWER ORGAN [LOR] (Lower keyboard)		
UPPER [UPR] (Upper keyboard)	Recording all parts of the respective keyboard performance (realtime/step)	<ul style="list-style-type: none">• Same as recorded contents of UPPER/LOWER SOUND 1 to 3, and UPPER/LOWER ORGAN, above• ORCHESTRAL CONDUCTOR status• Glide on/off
LOWER [LWR] (Lower keyboard)		
Part 8 to 15 [P8 to P15], (Upper keyboard)	Recording the respective part (realtime/step)	<ul style="list-style-type: none">• Selected sounds, volume• DIGITAL EFFECT, DSP EFFECT, SUSTAIN on/off• Aftertouch
BASS [BAS] (Pedal, lower keyboard [full bass pedal])		
KEYBOARD PERCUSSION [KBP] (Lower keyboard)	Recording the keyboard performance using the KEYBOARD PERCUSSION (realtime/step)	<ul style="list-style-type: none">• Selected sound (drum kit), volume
CHORD [CHD] (Lower keyboard)	Recording the chord progression for the AUTO PLAY CHORD (step)	<ul style="list-style-type: none">• Chord progression• FILL IN 1, FILL IN 2, INTRO & ENDING on

Part (Recorded keyboard)	Used for	Recorded contents
RHYTHM [RHY]	Recording settings related to the rhythm (step)	<ul style="list-style-type: none">• Rhythm settings and selection changes (including COMPOSER)• START/STOP, FILL IN 1, FILL IN 2, INTRO & ENDING on• Tempo setting
CONTROL [CTL]	Recording panel button settings and changes (realtime/step)	<ul style="list-style-type: none">• Tab, SOUND 1, 2 and 3 sound settings, rhythm settings, volumes• Tab tremolo, effect• DIGITAL EFFECT, SUSTAIN on/off• DSP EFFECT on/off, type and depth setting• DIGITAL REVERB on/off• AUTO PLAY CHORD status• DYNAMIC ACCOMP on/off• MUSIC STYLE ARRANGER status• VARIATION on/off, FILL IN 1, 2, INTRO & ENDING• PANEL MEMORY settings• TRANPOSE status• BACKGROUND SOUND setting• Tempo setting• CONDUCTOR, PART SELECT status• Knee lever, expression pedal operation• EXTRA TAB settings• ACCOMP PART on/off• KEYBOARD PERCUSSION on/off• TECHNI-CHORD on/off• Full bass pedal on/off

- You can use the TRACK ASSIGN function to assign parts to tracks as you wish. (Refer to page 79.)
- During recording, the MEASURE count on the display corresponds to the time signature of the selected rhythm. However, if rhythm data is stored in the RHYTHM part and that part is played back, the MEASURE count on the display corresponds to the stored rhythm data.

■ Factory-preset track assignment



- | | |
|-----------------|-------------------------|
| 1: UPPER SOUND1 | 9: PART9 |
| 2: UPPER SOUND2 | 10: PART10 |
| 3: UPPER SOUND3 | 11: PART11 |
| 4: LOWER SOUND1 | 12: PART12 |
| 5: LOWER SOUND2 | 13: UPPER ORGAN |
| 6: CHORD | 14: LOWER ORGAN |
| 7: BASS | 15: RHYTHM |
| 8: CONTROL | 16: KEYBOARD PERCUSSION |

Realtime Record

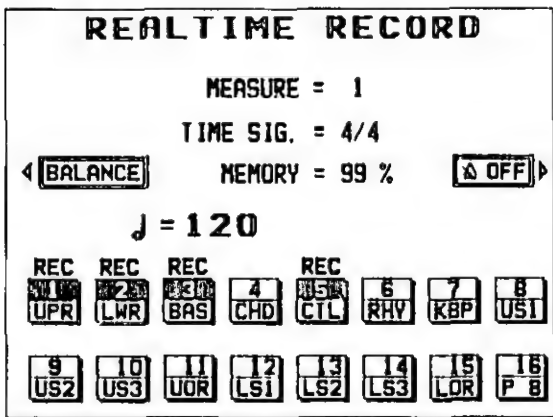
With REALTIME RECORD, your performance is recorded with the timing exactly as you played it on the keyboard. And with multi-track recording, you can use up to 16 tracks to record your performance.

Recording

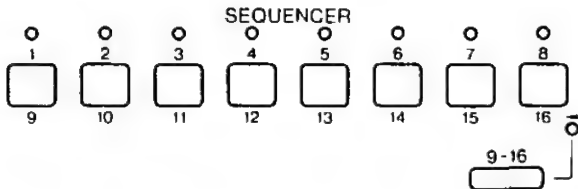
- 1. Set the sounds, effects, volumes, etc. for the parts you are going to record.
- 2. Press the **SEQUENCER REC** button to turn it on.



- The display looks similar to the following.



- 3. Use the buttons below the display to specify the tracks for the parts you are going to record. (For details about track assignment, refer to pages 70 and 79.)
 - Press the buttons to display "REC" above the track numbers you are going to record.
 - For tracks 1 to 8, use the \wedge buttons, and for tracks 9 to 16 use the \vee buttons to select the tracks.
 - You can select two or more tracks to record at one time.
 - At this time, the panel settings you selected in step 1 are stored.
- You can also use the **SEQUENCER** track buttons to select the tracks.



- To select tracks 9 to 16, make your selection while pressing the **9-16** button.
- The indicator for the selected track button flashes slowly. (For tracks 9 to 16, the indicator flashes when the **9-16** button is pressed.)
- 4. Use the **TEMPO/PROGRAM** dial to adjust the tempo.
 - The tempo is shown on the display as a numerical value (J =).
 - If you wish to record the tempo setting and tempo changes, record them in the **CONTROL** part, or use the **RHYTHM STEP RECORD**.
- 5. Turn the metronome on or off as desired with the **ON** or **OFF** button.
 - The metronome selection alternates between **ON** and **OFF** each time the button is pressed.
 - The metronome sound is not recorded.

6. Play the keyboard.

- Recording begins.
- You can also press the **START/STOP** button to start the rhythm and begin recording.
- If the metronome is on, when you press the **START/STOP** button, a two-measure count plays, after which recording automatically begins. In this case, the rhythm does not start.
- On the display, the following information is shown.

MEASURE=: Current measure number

TIME SIG.=: Time signature

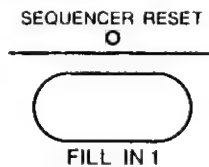
MEMORY=: Remaining memory (%)

- If you wish to adjust the volume of each track or part during recording, press the **BALANCE** button to recall the **PART BALANCE** display. You can then adjust the volumes.
- If you make a mistake in recording, you can correct a specific portion of your performance without having to redo the whole part. (Refer to page 89.)

7. When you have finished recording, press the **SEQUENCER REC** button to turn it off.

Playback

1. Turn on the track buttons for the parts you wish to play back.
 - Tracks whose indicators are not lit will not be played back.
2. Press the **SEQUENCER RESET (FILL IN 1)** button.



3. Press the **START/STOP** button.
 - The recorded performance is played back automatically.

- The **SEQUENCER** returns to the beginning of the song and the beginning panel settings are recalled.

Multi-track recording

When recording several tracks, you can record one track while listening to the track or tracks already recorded.

1. Follow the procedure to record the first track.
 - When you turn the **SEQUENCER REC** button off, confirm that the indicator for the track you recorded is lit. Turn on the buttons for the tracks you wish to have played back.
2. Follow the procedure to record the next track.
 - When the **START/STOP** button is turned on, the track recorded in step 1 is played back. You can record the next track in time with this.
 - On the display "REC" indicates tracks which are being recorded, and "PLAY" indicates tracks which are being played back.
3. Repeat step 2 to record all the desired parts.

Step Record

STEP RECORD is simply a method of making a tune by storing the sounds note-by-note on the display. Instead of playing the keyboards directly as in the REALTIME RECORD mode, you can take your time to input each single note. This is an especially effective method for storing complicated passages that are difficult to play or when the exact timing of a part is critical.

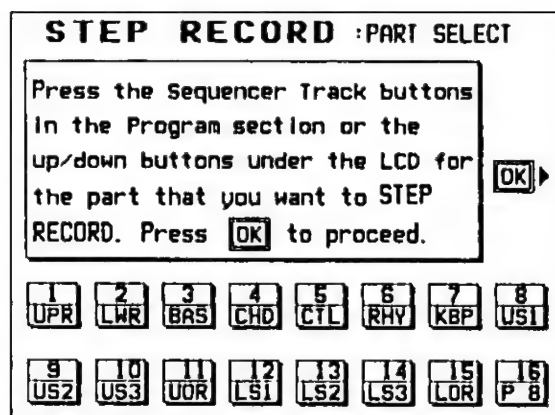
Recording procedure

Record the keyboard performance and panel changes.

1. Press the **STEP REC** button to turn it on.



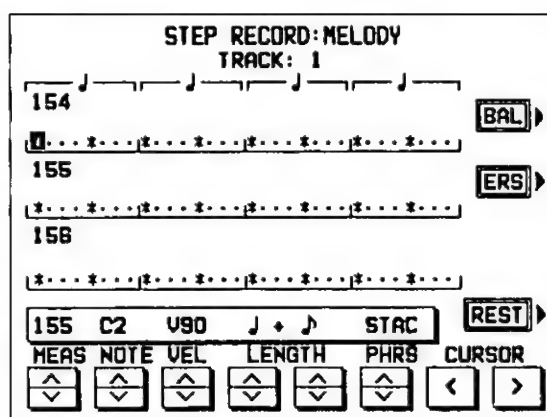
- The display looks similar to the following.



2. Use the buttons below the display to specify the tracks for the parts you are going to record.
 - For tracks 1 to 8, use the \wedge buttons, and for tracks 9 to 16, use the \vee buttons to select the track.
 - You can also use the **SEQUENCER** track buttons to select the track. In this case, to select tracks 9 to 16, make your selection while pressing the 9-16 button.
 - On the display, the selected track number is highlighted. Confirm that this is the correct track.

3. Press the OK button.

- The display changes to the STEP RECORD input display.



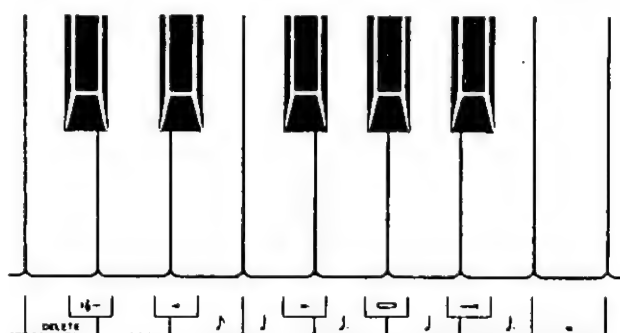
- If you selected the track to which the CHORD part has been assigned, the display changes to the CHORD STEP RECORD display. (Refer to page 76.)
 - If you selected the track to which the RHYTHM part has been assigned, the display changes to the RHYTHM STEP RECORD display. (Refer to page 78.)
4. Use the MEAS \wedge and \vee buttons to select the measure.
 - This step is not necessary if you are recording from measure 1 of a blank track.

5. Use the CURSOR < and > buttons to move the cursor (reverse video box) to the note position (dot) you are going to store.
 - Each dot represents one-eighth of a quarter-note (a thirty-second note).
 - When storing triplets, it may not be possible to match the timing exactly with the 1/32-note steps. However, if you select triplet-type notes for the note length (LENGTH) in step 6 below, the timing is automatically corrected.
6. Use the left LENGTH ^ and v buttons to specify the note value. Select from ♩_3 , ♩_4 , ♩_6 , ♩_8 , ♩_{16} , ♩_{32} , ♩_{64} , ♩_{128} , ♩_{256} , ♩_{512} , ♩_{1024} , ♩_{2048} , ♩_{4096} , ♩_{8192} , ♩_{16384} , ♩_{32768} , ♩_{65536} , ♩_{131072} , ♩_{262144} , ♩_{524288} , $\text{♩}_{1048576}$, $\text{♩}_{2097152}$, $\text{♩}_{4194304}$, $\text{♩}_{8388608}$, $\text{♩}_{16777216}$, $\text{♩}_{33554432}$, $\text{♩}_{67108864}$, $\text{♩}_{134217728}$, $\text{♩}_{268435456}$, $\text{♩}_{536870912}$, $\text{♩}_{1073741824}$, $\text{♩}_{2147483648}$, $\text{♩}_{4294967296}$, $\text{♩}_{8589934592}$, $\text{♩}_{17179869184}$, $\text{♩}_{34359738368}$, $\text{♩}_{68719476736}$, $\text{♩}_{137438953472}$, $\text{♩}_{274877906944}$, $\text{♩}_{549755813888}$, $\text{♩}_{1099511627776}$, $\text{♩}_{2199023255552}$, $\text{♩}_{4398046511104}$, $\text{♩}_{8796093022208}$, $\text{♩}_{17592186044416}$, $\text{♩}_{35184372088832}$, $\text{♩}_{70368744177664}$, $\text{♩}_{140737488355328}$, $\text{♩}_{281474976710656}$, $\text{♩}_{562949953421312}$, $\text{♩}_{1125899906842624}$, $\text{♩}_{2251799813685248}$, $\text{♩}_{4503599627370496}$, $\text{♩}_{9007199254740992}$, $\text{♩}_{18014398509481984}$, $\text{♩}_{36028797018963968}$, $\text{♩}_{72057594037927936}$, $\text{♩}_{144115188075855872}$, $\text{♩}_{288230376151711744}$, $\text{♩}_{576460752303423488}$, $\text{♩}_{1152921504606846976}$, $\text{♩}_{2305843009213693952}$, $\text{♩}_{4611686018427387904}$, $\text{♩}_{9223372036854775808}$, $\text{♩}_{18446744073709551616}$, $\text{♩}_{36893488147419103232}$, $\text{♩}_{73786976294838206464}$, $\text{♩}_{147573952589676412928}$, $\text{♩}_{295147905179352825856}$, $\text{♩}_{590295810358705651712}$, $\text{♩}_{1180591620717411303424}$, $\text{♩}_{2361183241434822606848}$, $\text{♩}_{4722366482869645213696}$, $\text{♩}_{9444732965739290427392}$, $\text{♩}_{18889465931478580854784}$, $\text{♩}_{37778931862957161709568}$, $\text{♩}_{75557863725914323419136}$, $\text{♩}_{151115727451828646838272}$, $\text{♩}_{302231454903657293676544}$, $\text{♩}_{604462909807314587353088}$, $\text{♩}_{1208925819614629174706176}$, $\text{♩}_{2417851639229258349412352}$, $\text{♩}_{4835703278458516698824704}$, $\text{♩}_{9671406556917033397649408}$, $\text{♩}_{19342813113834066795298816}$, $\text{♩}_{38685626227668133590597632}$, $\text{♩}_{77371252455336267181195264}$, $\text{♩}_{154742504910672534362390528}$, $\text{♩}_{309485009821345068724781056}$, $\text{♩}_{618970019642690137449562112}$, $\text{♩}_{1237940039285380274899124224}$, $\text{♩}_{2475880078570760549798248448}$, $\text{♩}_{4951760157141521099596496896}$, $\text{♩}_{9903520314283042199192993792}$, $\text{♩}_{19807040628566084398385987584}$, $\text{♩}_{39614081257132168796771975168}$, $\text{♩}_{79228162514264337593543950336}$, $\text{♩}_{158456325028528675187087900672}$, $\text{♩}_{316912650057057350374175801344}$, $\text{♩}_{633825300114114700748351602688}$, $\text{♩}_{1267650600228229401496703205376}$, $\text{♩}_{2535301200456458802993406410752}$, $\text{♩}_{5070602400912917605986812821504}$, $\text{♩}_{10141204801825835211973625643008}$, $\text{♩}_{20282409603651670423947251286016}$, $\text{♩}_{40564819207303340847894502572032}$, $\text{♩}_{81129638414606681695789005144064}$, $\text{♩}_{162259276829213363391578010288128}$, $\text{♩}_{324518553658426726783156020576256}$, $\text{♩}_{649037107316853453566312041152512}$, $\text{♩}_{1298074214633706907132624082305024}$, $\text{♩}_{2596148429267413814265248164610048}$, $\text{♩}_{5192296858534827628530496329220096}$, $\text{♩}_{10384593717069655257060992658440192}$, $\text{♩}_{20769187434139310514121985316880384}$, $\text{♩}_{41538374868278621028243970633760768}$, $\text{♩}_{83076749736557242056487941267521536}$, $\text{♩}_{166153499473114484112975882535043072}$, $\text{♩}_{332306998946228968225951765070086144}$, $\text{♩}_{664613997892457936451903530140172288}$, $\text{♩}_{1329227995784915872903807060280344576}$, $\text{♩}_{2658455991569831745807614120560689152}$, $\text{♩}_{5316911983139663491615228241121378304}$, $\text{♩}_{10633823966279326983230456482242756608}$, $\text{♩}_{21267647932558653966460912964485513216}$, $\text{♩}_{42535295865117307932921825928971026432}$, $\text{♩}_{85070591730234615865843651857942052864}$, $\text{♩}_{170141183460469231731687303715884105728}$, $\text{♩}_{340282366920938463463374607431768211456}$, $\text{♩}_{680564733841876926926749214863536422912}$, $\text{♩}_{1361129467683753853853498429727072845824}$, $\text{♩}_{2722258935367507707706996859454145691648}$, $\text{♩}_{5444517870735015415413993718908291383296}$, $\text{♩}_{10889035741470030830827987437816582766592}$, $\text{♩}_{21778071482940061661655974875633165533184}$, $\text{♩}_{43556142965880123323311949751266331066368}$, $\text{♩}_{87112285931760246646623899502532662132736}$, $\text{♩}_{174224571863520493293247799005065324265472}$, $\text{♩}_{348449143727040986586495598010130648530944}$, $\text{♩}_{696898287454081973172991196020261297061888}$, $\text{♩}_{1393796574908163946345982392040522594123776}$, $\text{♩}_{2787593149816327892691964784081045188247552}$, $\text{♩}_{5575186299632655785383929568162090376495104}$, $\text{♩}_{11150372599265311570767859136324180752990208}$, $\text{♩}_{22300745198530623141535718272648361505980416}$, $\text{♩}_{44601490397061246283071436545296723011960832}$, $\text{♩}_{89202980794122492566142873090593446023921664}$, $\text{♩}_{178405961588244985132285746181186892047843328}$, $\text{♩}_{356811923176489970264571492362373784095686656}$, $\text{♩}_{713623846352979940529142984724747568191373312}$, $\text{♩}_{1427247692705959881058285969449495136382746624}$, $\text{♩}_{2854495385411919762116571938898990272765493248}$, $\text{♩}_{5708990770823839524233143877797980545530986496}$, $\text{♩}_{11417981541647679048466287755595961091061972992}$, $\text{♩}_{22835963083295358096932575511191922182123945984}$, $\text{♩}_{45671926166590716193865151022383844364247891968}$, $\text{♩}_{91343852333181432387730302044767688728495783936}$, $\text{♩}_{182687704666362864775460604089535377456991567872}$, $\text{♩}_{365375409332725729550921208179070754913983135744}$, $\text{♩}_{730750818665451459101842416358141509827966271488}$, $\text{♩}_{1461501637330902918203684832716283019655932542976}$, $\text{♩}_{2923003274661805836407369665432566039311865085952}$, $\text{♩}_{5846006549323611672814739330865132078623730171904}$, $\text{♩}_{11692013098647223345629478661730264157247460343808}$, $\text{♩}_{23384026197294446691258957323460528314494920687616}$, $\text{♩}_{46768052394588893382517914646921056628989841375232}$, $\text{♩}_{93536104789177786765035829293842113257979682750464}$, $\text{♩}_{187072209578355573530071658587684226515959365500928}$, $\text{♩}_{374144419156711147060143317175368453031918731001856}$, $\text{♩}_{748288838313422294120286634350736906063837462003712}$, $\text{♩}_{1496577676626844588240573268701473812127674924007424}$, $\text{♩}_{2993155353253689176481146537402947624255349848014848}$, $\text{♩}_{5986310706507378352962293074805895248510699696029696}$, $\text{♩}_{11972621413014756705924586149611790497021399392059392}$, $\text{♩}_{23945242826029513411849172299223580994042798784118784}$, $\text{♩}_{47890485652059026823698344598447161988085597568237568}$, $\text{♩}_{95780971304118053647396689196894323976171195136475136}$, $\text{♩}_{191561942608236107294793378393788647952342390272950272}$, $\text{♩}_{383123885216472214589586756787577295904684780545900544}$, $\text{♩}_{766247770432944429179173513575154591809369561091801088}$, $\text{♩}_{1532495540865888858358347027150309183618739122183602176}$, $\text{♩}_{3064991081731777716716694054300618367237478244367204352}$, $\text{♩}_{6129982163463555433433388108601236734474956488734408704}$, $\text{♩}_{12259964326927110866866776217202473468949912977468817408}$, $\text{♩}_{24519928653854221733733552434404946937899825954937634816}$, $\text{♩}_{49039857307708443467467104868809893875799651909875269632}$, $\text{♩}_{98079714615416886934934209737619787751599303819750539264}$, $\text{♩}_{196159429230833773869868419475239575503198607639501078528}$, $\text{♩}_{392318858461667547739736838950479151006397215279002157056}$, $\text{♩}_{784637716923335095479473677900958302012794430558004314112}$, $\text{♩}_{1569275433846670190958947355801916604025588861116008628224}$, $\text{♩}_{3138550867693340381917894711603833208051177722232017256448}$, $\text{♩}_{6277101735386680763835789423207666416102355444464034512896}$, $\text{♩}_{12554203470773361527671578846415332832204710888928069025792}$, $\text{♩}_{25108406941546723055343157692830665664409421777856138051584}$, $\text{♩}_{50216813883093446110686315385661331328818843555712276103168}$, $\text{♩}_{100433627766186892221372630771322662657637687111424552206336}$, $\text{♩}_{200867255532373784442745261542645325315275374222849104412672}$, $\text{♩}_{401734511064747568885490523085290650630550748445698208825344}$, $\text{♩}_{803469022129495137770981046170581301261101496891396417650688}$, $\text{♩}_{1606938044258990275541962092341162602522202993782792835301376}$, $\text{♩}_{3213876088517980551083924184682325205044405987565585670602752}$, $\text{♩}_{6427752177035961102167848369364650410088811975131171341205504}$, $\text{♩}_{12855504354071922204335696738729300820177623950262342682411008}$, $\text{♩}_{25711008708143844408671393477458601640355247900524685364822016}$, $\text{♩}_{51422017416287688817342786954917203280710495801049370729644032}$, $\text{♩}_{102844034832575377634685573909834406561420991602098741459288064}$, $\text{♩}_{205688069665150755269371147819668813122841983204197482918576128}$, $\text{♩}_{411376139330301510538742295639337626245683966408394965837152256}$, $\text{♩}_{822752278660603021077484591278675252491367932816789931674304512}$, $\text{♩}_{1645504557321206042154969182557350504982735865633579863348609024}$, $\text{♩}_{3291009114642412084309938365114701009965471731267159726697218048}$, $\text{♩}_{6582018229284824168619876730229402019930943462534319453394436096}$, $\text{♩}_{13164036458569648337239753460458804039861886925068638906788872192}$, $\text{♩}_{26328072917139296674479506920917608079723773850137277813577744384}$, $\text{♩}_{52656145834278593348959013841835216159447547700274555627155488768}$, $\text{♩}_{105312291668557186697918027683670432318895095400549111254310977536}$, $\text{♩}_{210624583337114373395836055367340864637790190801098222508621955072}$, $\text{♩}_{421249166674228746791672110734681729275580381602196445017243910144}$, $\text{♩}_{842498333348457493583344221469363458551160763204392890034487820288}$, $\text{♩}_{1684996666796914987166688442938726917102321526408785780068975640576}$, $\text{♩}_{3369993333593829974333376885877453834204643052817571560137951281152}$, $\text{♩}_{6739986667187659948666753771754907668409286105635143120275902562304}$, $\text{♩}_{13479973334375319897333507543509815336818572211270286240551805124608}$, $\text{♩}_{26959946668750639794667015087019630673637144422540572481103610249216}$, $\text{♩}_{53919893337501279589334030174039261347274288845081144962207220498432}$, $\text{♩}_{107839786675002559178668060348078522694548577690162289924414440996864}$, $\text{♩}_{215679573350005118357336120696157045389097155380324579848828881993728}$, $\text{♩}_{431359146700010236714672241392314090778194310760649159697657763987456}$, $\text{♩}_{862718293400020473429344482784628181556388621521298319395315527974912}$, $\text{♩}_{1725436586800040946858688965569256363112777243042596638790631055949824}$, $\text{♩}_{3450873173600081893717377931138512726225554486085193277581262111899648}$, $\text{♩}_{6901746347200163787434755862277025452451108972170386555162524223799296}$, $\text{♩}_{13803492694400327574869511724554050904902217944340773110325048447598592}$, $\text{♩}_{27606985388800655149739023449108101809804435888681546220650096895197184}$, $\text{♩}_{55213970777601310299478046898216203619608871777363092441300193790394368}$, $\text{♩}_{110427941555202620598956093796432407239217743554726184882600387580788736}$, $\text{♩}_{220855883110405241197912187592864814478435487109452369765200775161577472}$, $\text{♩}_{441711766220810482395824375185729628956870974218904739530401550323154944}$, $\text{♩}_{883423532441620964791648750371459257913741948437809479060803100646309888}$, $\text{♩}_{1766847064883241929583297500742918515827483896875618958121606201292619776}$, $\text{♩}_{3533694129766483859166595001485837031654967793751237916243212402585239552}$, $\text{♩}_{7067388259532967718333190002971674063309935587502475832486424805170479104}$, $\text{♩}_{14134776519065935436666380005943348126619871175004951664972849610340958208}$, $\text{♩}_{28269553038131870873332760011886696253239742350009903329945699220681916416}$, $\text{♩}_{56539106076263741746665520023773392506479484700019806659891398441363832832}$, $\text{♩}_{113078212152527483493331040047546785012958969400039613319782796882727665664}$, $\text{♩}_{226156424305054966986662080095093570025917938800079226639565593765455331328}$, $\text{♩}_{45231284861010993397332416019018714005183$

Store a chord progression

Store the chord progression for the **AUTO PLAY CHORD** in the track for the CHORD part. Then, when the **AUTO PLAY CHORD** is used during playback, even if you do not specify the chords with your left hand, the chords change automatically.

- The chord length is specified with the **CHORD STEP RECORD** keys of the lower keyboard.



Note value keys

- Whole note
- ◡ Dotted half-note
- ◡ Half-note
- ◡ Dotted quarter-note
- ◡ Quarter-note
- ◡ Eighth-note

Reset key

- Press to begin storing from the beginning.

Correction keys

- ◀ Move back one chord.
- ▶ Move forward one chord.
- DELETE Press to erase data.

Repeat key

- Press to end the chord-storing procedure and to specify automatic repeat playback of the stored progression.

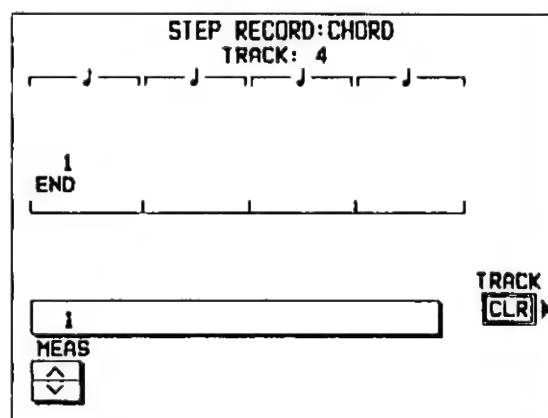
End key

- Press after the whole chord progression has been stored.

■ Example of storing a chord progression

C	C	F	G7	C	Am
○	○	◡	◡	◡	◡

- Press the **STEP REC** button to turn it on.
- Use the buttons below the display or **SEQUENCER** track buttons to select the track to which the CHORD part is assigned (the factory preset is 4).
 - On the display, the track for the CHORD part (CHD) is highlighted. Confirm that this is the correct track.
- Press the OK button.
 - The display changes to the CHORD STEP RECORD input display similar to the following.

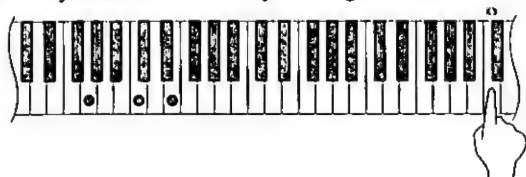


4. Use the MEAS \wedge and \vee buttons to select the measure you wish to record.
 - This step is not necessary if you are recording from measure 1 of a blank track.

5. Store the chords on the lower keyboard.

<Measure 1, measure 2>

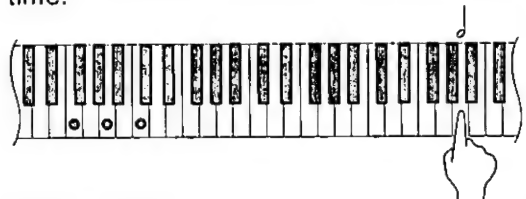
While playing a C chord with your left hand, press the **o** key one time with your right hand.



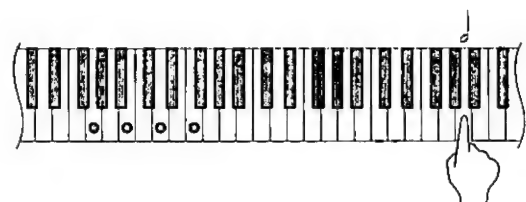
- A “beep” tone indicates that the chord has been successfully stored.
- The chord name is shown on the display.

<Measure 3>

- (1) While playing an F chord, press the \flat key one time.







- (2) While playing a G7 chord, press the \downarrow key one time.



<Measure 4>

- (1) While playing a C chord, press the \flat key one time.
- (2) While playing an Am chord, press the \flat key one time.

- You can press the **INTRO & ENDING** button or a **FILL IN** button on the panel to store the desired pattern at the cursor position. (An intro can be stored only at the beginning.)
 - Store a rest by pressing a note value key without specifying a chord.
 - Chords can also be specified with the one-finger method.
6. At the end of the chord progression, press the End key ().
- The instrument exits the recording mode.
 - During playback, playback of the recorded chord progression stops at this point. For automatic repeat playback of the chord progression, press the Repeat key () instead of the End key ().
 - If you press the **INTRO & ENDING** button instead of the End key (), when you play back your performance, an ending pattern will be produced and then the performance will stop.
 - When you play back the track for the CHORD part, the chords of the automatic accompaniment change in accordance with the stored chord progression.

2. Correct the recorded chord progression

1. Select CHORD STEP RECORD on the display.
2. Use the MEAS \wedge and \vee buttons to go to the measure you wish to modify. Use the \blacktriangleleft and \blacktriangleright Correction keys to move the cursor to the point you wish to edit.
- The measure number, beat number, specified chord name, specified note length, and function (**INTRO**, **FILL IN**, etc.) are shown on the display.
- To move to the end of the chord progression, while pressing the Reset key ($\text{I} \frac{L}{\text{R}}$), press the \blacktriangleleft key.

- The lengths of rests are indicated as follows.

Example:

Example:

♩	1-beat rest (quarter rest)
♪	1/2-beat rest (eighth rest)
♩ × 1 + ♪	1-1/2-beat rest (dotted quarter rest)
♩ × 10	10-beat rest

3. Correct the chord data.

Chord data

When the chord name is displayed at the cursor position, you can press the **DELETE** key to erase the data and then store a new chord.

- If you do not erase the displayed data before entering the new chord data, the new data is inserted at this point, and the displayed data is merely shifted by the note value of the new chord.
- Rests can also be erased. Each time the **DELETE** key is pressed, the rest is erased in units of $\frac{1}{2} \times 1$. The $\frac{7}{8}$ rest is erased last.

Control data

The name of the stored function (INTRO, FILL, etc.) is displayed. You can press the **DELETE** key to erase the data which is displayed.

■ TRACK CLEAR

To erase all data from the current track, press the **TRACK CLR** button, and then press the **YES** button on the confirmation display.

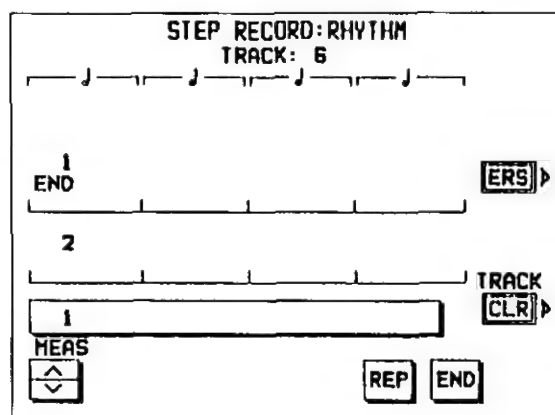
- If you wish to cancel the clear procedure, press the **NO** button.

Store a rhythm progression

Data for the rhythm progression can be stored by measures with the step recording method.

- The rhythm progression is recorded in the track for the RHYTHM part.

1. Press the **STEP REC** button to turn it on.
2. Use the buttons below the display or **SEQUENCER** track buttons to select the track to which the RHYTHM part is assigned (the factory preset is 6).
- On the display, the track for the RHYTHM part (RHY) is highlighted. Confirm that this is the correct track.
3. Press the **OK** button.
- The display changes to the RHYTHM STEP RECORD input display similar to the following.



4. Use the **MEAS** \wedge and \vee buttons to select the measure you wish to record.
- This step is not necessary if you are recording from measure 1 of a blank track.

5. Use the panel buttons to store the rhythm data.
- Data which can be stored

START/STOP

Changes in the rhythm selection

COUNT INTRO, INTRO, FILL IN, VARIATION, ENDING

Tempo changes

- Be sure to store the **START/STOP** data in the measure in which the rhythm starts.
- If you are storing a **COUNT INTRO** or **INTRO**, store this data before the **START/STOP** data.

6. Repeat steps 4 and 5 to continue storing the rhythm progression.

7. At the end of the rhythm progression, press the **REP** button or the **END** button.

REP: During playback, the recorded rhythm progression is repeated.

END: During playback, playback of the recorded rhythm progression stops at this point.

- The instrument exits the recording mode.

■ **Correct the recorded rhythm progression**

- 1. Follow the procedure to select the RHYTHM STEP RECORD display.
- 2. Use the MEAS ^ and v buttons to go to the measure you wish to modify.
- 3. Correct the rhythm data.
 - Press the ERS button to erase data at the cursor position.
 - If you select a rhythm with a different time signature, the time signature of all subsequent measures will also change.
 - If data has already been recorded in other tracks, you cannot select a rhythm with a different time signature.

■ **TRACK CLEAR**

- To erase all data from the current track, press the TRACK CLR button, and then press the YES button on the confirmation display.
- If you wish to cancel the clear procedure, press the NO button.

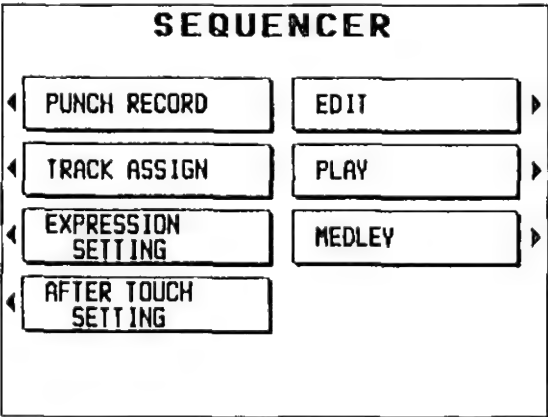
Track Assign

Each **SEQUENCER** part is already assigned to a track number. However, you can use the TRACK ASSIGN function to assign parts to tracks as you wish. This function is also used to designate the tracks used for the rhythm data and chord progression data.

- 1. Press the **SEQUENCER** button to turn it on.
- 2. On the **SEQUENCER** menu display, select TRACK ASSIGN.
- The display looks similar to the following.



- The display looks similar to the following.



TRACK ASSIGN			
	TRACK ASSIGN	LOCAL CONTROL	MIDI-OUT CHANNEL
TRACK	TR 1 UPPER	ON	CH --
	TR 2 LOWER	ON	CH --
	TR 3 BASS	ON	CH 3
	TR 4 CHORD	--	CH --
	TR 5 CONTROL	ON	CH 15
	TR 6 RHYTHM	ON	CH 16
	TR 7 KB. PERC	ON	CH 16
	TR 8 U. SND 1	ON	CH 1
	ASSIGN	LOCAL	CHANNEL

- 3. Use the TRACK ^ and v buttons to select the track.
- You can switch between the setting display for tracks 1 to 8 and the display for tracks 9 to 16 with the 1-8 and 9-16 buttons.

4. Use the ASSIGN \wedge and \vee buttons to select the part for the specified track.
 - Select one of the following parts: UPPER, LOWER, BASS, CHORD, CONTROL, RHYTHM, KB.PERC, USOUND 1 to 3, UORGAN, LSOUND 1 to 3, LORGAN, PART8 to 15. (For an explanation of each **SEQUENCER** part, refer to page 70.)
 - When a part other than the RHYTHM, CONTROL or CHORD part is assigned, the track assign procedure is completed at this point.
 - The RHYTHM, CONTROL and CHORD parts cannot be assigned to more than one track.
 - You can use the LOCAL \wedge and \vee buttons to turn the LOCAL CONTROL on or off, and the CHANNEL \wedge and \vee buttons to assign the BASIC CHANNEL. (For a detailed explanation of these MIDI functions, refer to pages 145 and 146.)
5. When assigning the RHYTHM, CONTROL or CHORD part, press the OK button.
 - The confirmation display appears to warn you that currently stored data in the tracks concerned will be erased. Press the YES button to confirm that you wish to execute the specified track assignment. Or press the NO button to stop the track assignment.

Other recording settings you can adjust

These settings allow you to specify whether or not expression pedal and aftertouch data is recorded with your performance.

EXPRESSION SETTING

You can specify whether or not expression pedal operation data is recorded with your performance. And you can also specify whether the recorded expression pedal operation data is read when your performance is played back.

1. Press the **SEQUENCER** button to turn it on.
2. Select **EXPRESSION SETTING**.
 - The display looks similar to the following.

EXPRESSION SETTING

Select whether or not
Expression pedal movements are
recorded or played by the Sequencer.

RECORD TO SEQUENCER: ENABLE

\wedge
EN/DIS
 \vee

PLAY FROM SEQUENCER: ENABLE

\wedge
 \vee

3. Select **RECORD TO SEQUENCER**. Use the **EN/DIS** \wedge and \vee buttons to specify if the expression pedal performance is recorded.

ENABLE: The expression pedal operation data is recorded (factory-preset setting).

DISABLE: The data is not recorded.

4. Select **PLAY FROM SEQUENCER** and use the **EN/DIS** \wedge and \vee buttons to specify if the recorded expression pedal performance is played back.

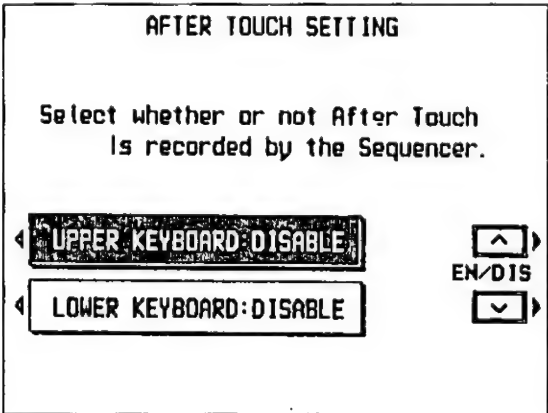
ENABLE: The recorded expression pedal data is played back (factory-preset setting).

DISABLE: The data is not played back.

AFTER TOUCH SETTING

Specify for each keyboard (upper and lower) whether or not the aftertouch data is recorded with the performance.

- 1. Press the **SEQUENCER** button to turn it on.
- 2. Select **AFTER TOUCH SETTING**.
 - The display looks similar to the following.



3. Select **UPPER KEYBOARD** or **LOWER KEYBOARD**. Use the **EN/DIS** \wedge and \vee buttons to specify if the aftertouch data is recorded.

ENABLE: Aftertouch data is recorded with the performance.

DISABLE: The data is not recorded (factory-preset setting).

- 4. Repeat step 3 for the other keyboard, if desired.
- For an explanation of the aftertouch effect, refer to page 125.

Editing the recorded performance

The edit feature allows you to erase or change portions of your performance after it has been recorded.

Select the edit function

1. Press the **SEQUENCER** button to turn it on.

2. Select EDIT.

• The display looks similar to the following.
3. Select the function to edit.

• The display changes in accordance with your selection.

4. Perform the editing procedures (explained in detail below).

• During the editing procedure, you can press the **EXIT** button to go back to the **SEQUENCER EDIT** display.

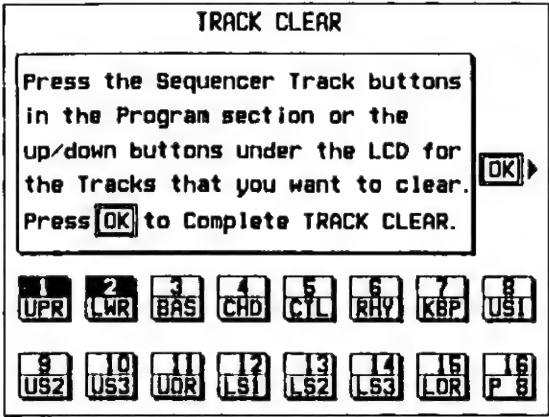
• During the editing procedure, if the indicator for the **TEMPO/PROGRAM** dial is lit, you can use the dial for the editing function.
- A screenshot of the 'SEQUENCER EDIT' menu. The title 'SEQUENCER EDIT' is at the top center. Below it, there are two columns of buttons. The left column contains: 'SONG CLEAR', 'TRACK CLEAR', 'MEASURE ERASE', 'MEASURE COPY', and 'VELOCITY CHANGE'. The right column contains: 'TRACK MERGE', 'QUANTIZE', 'MEASURE DELETE', and 'MEASURE INSERT'. Each button has a left-pointing arrow on its left side and a right-pointing arrow on its right side.
- ## SONG CLEAR
- Erase the recorded contents of all tracks.

• Press the YES button to execute the function, or press the NO button to cancel the function.
- A screenshot of the 'SONG CLEAR' confirmation screen. The title 'SONG CLEAR' is at the top center. Below it, there is a large rectangular box containing the text: 'ATTENTION!' in bold, 'Using SONG CLEAR will erase any existing recording in the Sequencer.' in regular font, and 'Are You Sure?' in bold. To the right of this box are two buttons: 'YES' and 'NO', each with a right-pointing arrow.
- When the data has been erased, "COMPLETED!" appears on the display, and the instrument returns to the normal performance mode.
- Practical applications
- 82

TRACK CLEAR

Erase the contents of a specific track.

- 2. Press the OK button.
- The following confirmation display appears.



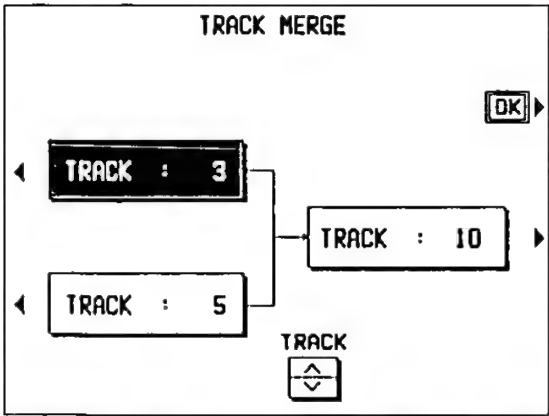
- 1. Use the buttons below the display or the **SEQUENCER** track buttons to select the track or tracks you wish to clear.
- On the display, the selected tracks are highlighted.

- Press the YES button to execute the function, or press the NO button to cancel the function.
- When the data has been erased, "COMPLETED!" appears on the display.

TRACK MERGE

Merge the recorded contents of two tracks (source tracks) and store the merged contents in a third track (destination track).

- When the TRACK MERGE function is executed, the data is erased from the two source tracks.

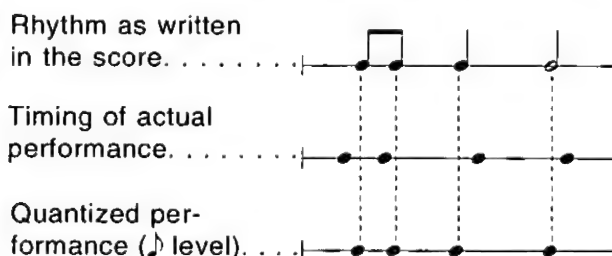


- 1. Select the two source tracks (left half of the display).
- Use the buttons on the left side of the display to select one of the source tracks, and use the TRACK ^ and v buttons to specify the track number. Repeat for the other source track.
- This function does not work for the CONTROL, RHYTHM and CHORD tracks.

- If the part assigned to the upper source track ("upper" meaning its position on the TRACK MERGE display) is different from the part assigned to the lower source track, when the parts are merged in the destination track, the new track is assigned the same part as the upper track.
2. Select the destination track (right half of the display).
 - Press the button on the right side of the display to select the destination track, and use the TRACK \wedge and \vee buttons to specify the track number.
 3. Press the OK button.
 - The confirmation display appears. Press the YES button to execute the function, or press the NO button to cancel the function.

QUANTIZE

The QUANTIZE function can correct the timing of your performance after it has been recorded. If the rhythm is slightly out of sync or inexact, it will automatically be corrected to the specified quantize level.



QUANTIZE

\blacktriangleleft	TRACK : 12	
\blacktriangleleft	FIRST MEASURE : 112	OK \blacktriangleright
\blacktriangleleft	LAST MEASURE : 139	\blacktriangleup \blacktriangleright
\blacktriangleleft	QUANTIZE VALUE : J	\blacktriangledown \blacktriangleright

1. Select TRACK. Use the \wedge and \vee buttons to specify the track number.
 - This function does not work for the CONTROL, RHYTHM and CHORD tracks.
 - If ALL is selected, all the tracks are quantized.
2. Select FIRST MEASURE. Use the \wedge and \vee buttons to specify the start point (measure number).
3. Select LAST MEASURE. Use the \wedge and \vee buttons to specify the end point (measure number).
4. Select QUANTIZE VALUE. Use the \wedge and \vee buttons to specify the quantize level.
 - Select from ♩₃, ♩, ♩₃, ♩, ♩₃, ♩, ♩. (A 3 denotes a triplet-type note.)
5. Press the OK button.
 - The confirmation display appears. Press the YES button to execute the function, or press the NO button to cancel the function.

MEASURE ERASE

Erase the recorded contents of specific measures. You can also specify which type of data is to be erased.

MEASURE ERASE

TRACK : 12

FIRST MEASURE : 112 [OK]

LAST MEASURE : 139 [^]

ERASE DATA : NOTE [v]

1. Select TRACK. Use the ^ and v buttons to specify the track number.
 - You cannot select the track for the RHYTHM part or CHORD part in which a repeat command has been stored.
 - If ALL is selected, data is erased from the specified measures of all the tracks at one time.
2. Select FIRST MEASURE. Use the ^ and v buttons to specify the start point (measure number).
3. Select LAST MEASURE. Use the ^ and v buttons to specify the end point (measure number).
4. Select ERASE DATA. Use the ^ and v buttons to specify the type of data to be erased.

ALL: All data is erased.

NOTE: Only note data.

CONTROL: Only control data (volume, effect and other panel settings as well as selection changes) is erased.
5. Press the OK button.
 - The confirmation display appears. Press the YES button to execute the function, or press the NO button to cancel the function.

MEASURE COPY

Copy measures from one track (source track) to another track (destination track).

- On the destination track, the new data replaces the current measure contents.

The image shows a 'MEASURE COPY' dialog box. It contains several input fields and buttons. At the top right is an 'OK' button. Below it are two columns of fields. The left column has 'FROM TRACK : 12', 'FIRST MEASURE : 112', and 'LAST MEASURE : 116'. The right column has 'TO TRACK : 5' and 'START MEASURE : 45'. A double-headed arrow points between the 'FIRST MEASURE' and 'START MEASURE' fields. At the bottom center is a 'MEASURE' label with a spinner button (up and down arrows).

1. Select FROM TRACK. Use the TRACK \wedge and \vee buttons to specify the source track.
 - You cannot select the track for the RHYTHM part or CHORD part in which a repeat command has been stored.
 - If ALL is selected, the specified measures are copied to all tracks at the same time.
2. Select FIRST MEASURE. Use the MEASURE \wedge and \vee buttons to specify the start point (measure number) on the source track.
3. Select LAST MEASURE. Use the MEASURE \wedge and \vee buttons to specify the end point (measure number) on the source track.
4. Select TO TRACK. Use the \wedge and \vee buttons to specify the destination track.
 - Measures in a track for the CONTROL, RHYTHM or CHORD part can be copied only to the same track.
5. Select START MEASURE. Use the \wedge and \vee buttons to specify the start point (measure number) on the destination track.
6. Press the OK button.
 - The confirmation display appears. Press the YES button to execute the function, or press the NO button to cancel the function.

MEASURE DELETE

Delete specified measures from a track.

- The length of the performance accordingly decreases by the number of deleted measures.

The screen is titled "MEASURE DELETE". It contains three input fields, each with a left arrow button and a right arrow button:

- TRACK : 12
- FIRST MEASURE : 112
- LAST MEASURE : 139

To the right of these fields are three buttons: "OK", an up arrow, and a down arrow.

- Select TRACK. Use the \wedge and \vee buttons to select the track from which measures are to be deleted.
 - You cannot select a CHORD or RHYTHM track in which the repeat function has been stored.
 - If ALL is selected, the specified measures are deleted from all the tracks at one time.
- Select FIRST MEASURE. Use the \wedge and \vee buttons to specify the first measure to delete.
- Select LAST MEASURE. Use the \wedge and \vee buttons to specify the last measure to delete.
- Press the OK button.
 - The confirmation display appears. Press the YES button to execute the function, or press the NO button to cancel the function.

MEASURE INSERT

Insert specified measures at a specified point.

- The length of the performance accordingly increases by the number of inserted measures.

The screen is titled "MEASURE INSERT". It contains several input fields and buttons:

- FROM TRACK : 12 (with left and right arrow buttons)
- TO TRACK : 5 (with right arrow button)
- FIRST MEASURE : 112 (with left and right arrow buttons)
- START MEASURE : 45 (with right arrow button)
- LAST MEASURE : 116 (with left and right arrow buttons)
- An arrow points from FIRST MEASURE to START MEASURE.
- Below these fields is a "TRACK" label with up and down arrow buttons.
- An "OK" button with a right arrow is in the top right corner.

- Select FROM TRACK. Use the TRACK \wedge and \vee buttons to select the source track.
 - You cannot select a CHORD or RHYTHM track in which the repeat function has been stored.
 - If ALL is selected, the measures are inserted in all tracks at the same time.
- Select FIRST MEASURE. Use the MEASURE \wedge and \vee buttons to specify the first measure on the source track from which to copy.
- Select LAST MEASURE. Use the MEASURE \wedge and \vee buttons to specify the last measure on the source track from which to copy.
- Select TO TRACK. Use the TRACK \wedge and \vee buttons to specify the destination track.
 - Measures from the CHORD, RHYTHM or CONTROL track can only be inserted in the same track.
- Select START MEASURE. Use the MEASURE \wedge and \vee buttons to specify the insert point on the destination track.
- Press the OK button.
 - The confirmation display appears. Press the YES button to execute the function, or press the NO button to cancel the function.

VELOCITY CHANGE

Modify the recorded velocity in specific measures of specific tracks (except for the CONTROL, RHYTHM and CHORD tracks).

VELOCITY CHANGE

TRACK : 12

FIRST MEASURE : 112

LAST MEASURE : 139

VELOCITY : +40

1. Select TRACK. Use the \wedge and \vee buttons to specify the track number.
 - If ALL is selected, all the tracks are modified.
2. Select FIRST MEASURE. Use the \wedge and \vee buttons to specify the start point (measure number) of the velocity change.
3. Select LAST MEASURE. Use the \wedge and \vee buttons to specify the end (measure number) of the velocity change.
4. Select VELOCITY. Use the \wedge and \vee buttons to specify the change in velocity (-127 to +127).
 - The value you select will be added to or deleted from the current velocity.

5. Press the OK button.

- The confirmation display appears. Press the YES button to execute the function, or press the NO button to cancel the function.

VELOCITY CHANGE

TRACK : 12

FIRST MEASURE : 112

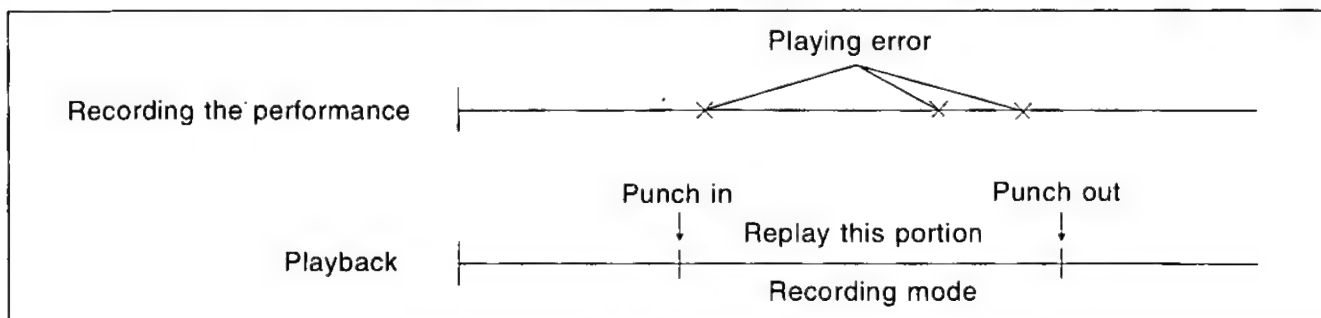
LAST MEASURE : 139

VELOCITY : +40

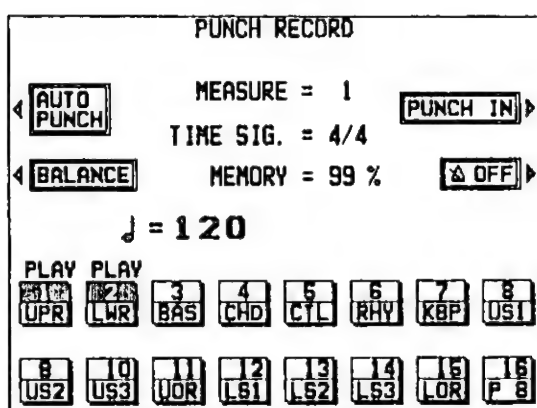
Are You Sure?

Punch record

If you make a playing error during **REALTIME RECORD** or would like to change the recording for some other reason, you can correct a selected portion of the performance without having to redo the whole part. "Punch in" means to enter the recording mode, and "punch out" means to exit it.



1. Press the **SEQUENCER** button to turn it on.
2. Select **PUNCH RECORD** on the display.
 - The display looks similar to the following.



3. Select the tracks you wish to play back during punch recording.
 - Use the buttons below the display to display "PLAY" above the track numbers you are going to play back.
 - If you use the **SEQUENCER** track buttons to select the tracks, press the track buttons to turn the indicators on.

4. Select the track which contains the portion you want to correct.
 - Use the buttons below the display to display "REC" above the track numbers you are going to record.
 - If you use the **SEQUENCER** track buttons to select the tracks, press the track buttons to make the indicators flash.
5. Press the **START/STOP** button to begin playback of the specified track.
6. During playback, press the **PUNCH IN** button at the point you want to begin recording.
 - Recording begins as soon as the button is pressed. Begin playing at this point.
 - The **PUNCH IN** button switches to the **PUNCH OUT** button.
7. Press the **PUNCH OUT** button at the point you want to stop recording.
 - Recording stops immediately.
8. When you have finished correcting the performance, press the **SEQUENCER** button to turn it off.
 - You can also begin punch-in recording by playing the keyboard. You can specify the punch-in/punch-out points with a foot switch. (Refer to page 125.)

■ AUTO PUNCH RECORD

You can set the punch-in and punch-out points beforehand, so that recording automatically begins and ends at the specified points.

1. On the **SEQUENCER** menu display, select **PUNCH RECORD**, and then select the track which contains the portion you want to correct.
2. Press the **AUTO PUNCH** button.
 - The display looks similar to the following.

AUTO PUNCH RECORD

CURRENT MEASURE : 18

PUNCH IN MEASURE : 20

OFF

PUNCH OUT MEASURE : 25

MEAS
^
v

MEASURE COUNT IN : 2

MEAS
^
v

Press the **START/STOP** button to begin

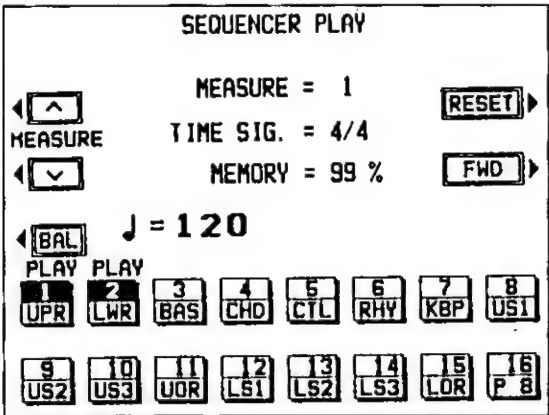
3. Select **PUNCH IN MEASURE**. Use the **MEAS** ^ and v buttons to specify the number of the punch-in measure.
4. Select **PUNCH OUT MEASURE**. Use the **MEAS** ^ and v buttons to specify the number of the punch-out measure.
 - The number of the **PUNCH OUT MEASURE** must be higher than the number of the **PUNCH IN MEASURE**.
 - The specified **PUNCH OUT MEASURE** is not recorded.
5. Select **MEASURE COUNT IN**. Use the **MEAS** ^ and v buttons to specify the number of lead-in measures you wish to have played back before the punch-in measure.
 - Playback will begin from the measure indicated by **CURRENT MEASURE** on the display.
 - Set the metronome to on or off with the **ON** or **OFF** button.

6. Press the **START/STOP** button.
 - Playback begins from the measure specified in step 5.
7. Correct the performance.
 - The mode changes automatically to the recording mode at the specified punch-in measure. Begin playing at this point. The mode automatically changes back to the playback mode at the specified punch-out measure.
 - Note that, even when you have set the punch-in and punch-out measures, you can begin recording before the punch-in measure starts by playing the keyboard or pressing a foot switch to which the **PUNCH IN/OUT** function has been assigned.
8. When you have finished correcting the performance, press the **SEQUENCER REC** button to turn it off.

Playback from a specific measure

You can specify the measure from which you wish playback to begin.

- 1. Press the **SEQUENCER** button to turn it on.
- 2. Select **PLAY** on the display.
 - The display looks similar to the following.



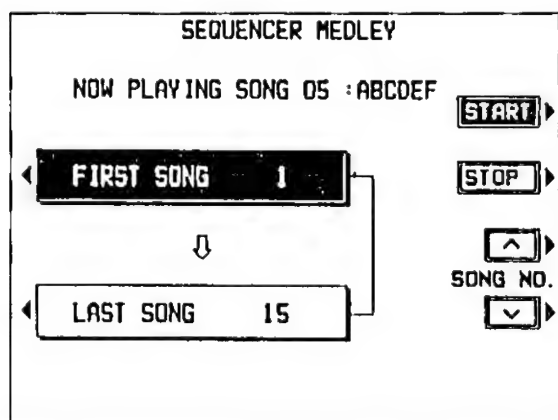
- 3. Select the tracks you wish to have played back.
- 4. Use the **MEASURE** ^ and v buttons to specify the beginning measure of playback.
 - "MEASURE=" indicates the current measure number.
 - You can quick-search for the desired measure while listening to the recorded performance by holding down the **FWD** button. (This button does not work during normal playback.)
 - You can press the **RESET** button to return to the beginning of the first measure and recall the panel status which was in effect at the beginning of recording. (This button does not work during playback.)
 - If you wish to adjust the volume of each track, press the **BAL** button to recall the **PART BALANCE** display. You can then adjust the volumes.

- 5. Press the **START/STOP** button.
 - The recorded performance is played back from the specified measure.
 - When playback is begun from a measure in which an **INTRO**, **COUNT INTRO**, **FILL IN** or **ENDING** is recorded, the corresponding function does not work.
- 6. To stop playback, press the **START/STOP** button again.
 - If the **START/STOP** button is pressed again, playback will continue from the point it was interrupted.

Sequencer Medley

You can have the songs on a disk played back continuously in order.

1. Insert the disk into the Disk Drive.
2. Press the **SEQUENCER** button to turn it on.
3. Select MEDLEY on the display.
 - The display looks similar to the following.



4. Select FIRST SONG. Use the SONG NO. \wedge and \vee buttons to specify the first song you wish to have played.
5. Select LAST SONG. Use the SONG NO. \wedge and \vee buttons to specify the last song.

6. Press the START button.
 - The songs from the specified range are repeatedly played back in order.
 - If you press the **START/STOP** button during medley play, the song currently playing will stop, and playback continues from the next recorded song on the disk.

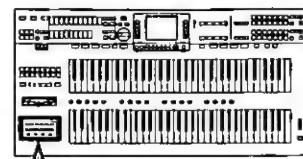
7. To stop medley play, press the STOP button.

8. Press the **SEQUENCER** button to turn it off.

- Only data which has been saved in the Technics file format can be played in a medley performance
- The procedure for saving your **SEQUENCER** performances on a disk is explained in Part V: Disk Drive (page 103).

Part IV Composer

Outline of the Composer



The **COMPOSER** enables you to create your own accompaniment patterns or to edit preset accompaniment patterns. Your original pattern is then stored in a memory and can be used just like the preset rhythms in the **RHYTHM GROUP** section.

□ Example of a rhythm pattern

ACCOMP 1

ACCOMP 2

ACCOMP 3

BASS

DRUMS

Components of a rhythm pattern

You can store up to 12 different rhythms (6 each in banks **A** and **B**).

- Each pattern is comprised of five parts: **DRUMS**, **BASS**, and **ACCOMP 1**, **2** and **3**.
- When you set the **COMPOSER** mode to the **EXPAND MODE**, you can also create **INTRO**, **FILL IN** and **ENDING** patterns. (Refer to page 102.)
- The recorded contents can be saved on a disk for recall at a later time. (Refer to page 107.)

Two ways to record in the COMPOSER

There are two ways to create and record a rhythm.

□ Edit a preset rhythm

Use the **COPY** function to copy a preset rhythm to a **MEMORY**, change parts of it, and then store it as a new rhythm.

■ Create a completely new rhythm

Clear the memories and compose a completely new rhythm from scratch.

- You can use either or both of two recording methods. Realtime recording allows you to store your rhythm exactly as play it on the keyboard. But for difficult phrases, you may want to use the **STEP RECORD** mode to store the notes one by one, just as you might write a music score.

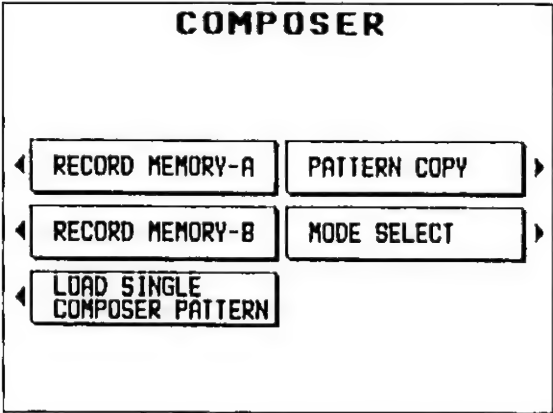
Memory capacity

Expressed in terms of notes, the total number of notes which can be stored in all the **COMPOSER** memories is about 8600. The remaining memory available for recording is shown on the **RECORD** display as a percentage (**MEMORY=%**).

- When "Memory full!" appears on the display, no more data can be stored in the **COMPOSER**.
- It is a good practice to save your completed rhythm patterns on disks before clearing any of the **COMPOSER** memories.

COMPOSER menu

When you press the **COMPOSER** button to turn it on, the display changes to the following.



■ Summary of the **COMPOSER** menu items

RECORD MEMORY-A (page 95)
Create rhythm patterns in the **COMPOSER A** bank.

RECORD MEMORY-B (page 95)
Create rhythm patterns in the **COMPOSER B** bank.

MODE SELECT (page 102)
Specify whether or not you are making your own **INTRO**, **FILL IN** and **ENDING** patterns.

PATTERN COPY (page 95)
Copy a rhythm pattern into a memory.

LOAD SINGLE COMPOSER PATTERN
Recall the desired **COMPOSER** data from data saved on a disk.

- The items on this menu are also on the **DISK DRIVE** menu, and the procedures are the same. (Refer to page 109.)

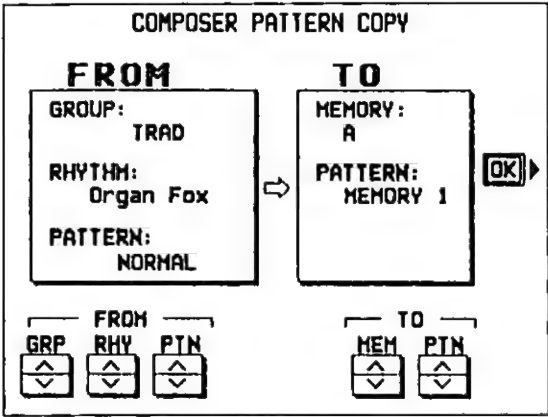
Practical applications

Setting up to create a rhythm pattern

First decide whether you are going to “Edit a preset rhythm pattern” or “Create a completely new rhythm.” Below are the instructions for preparing to edit a preset rhythm pattern. If you are going to create a completely new rhythm pattern, follow the instructions on page 96.

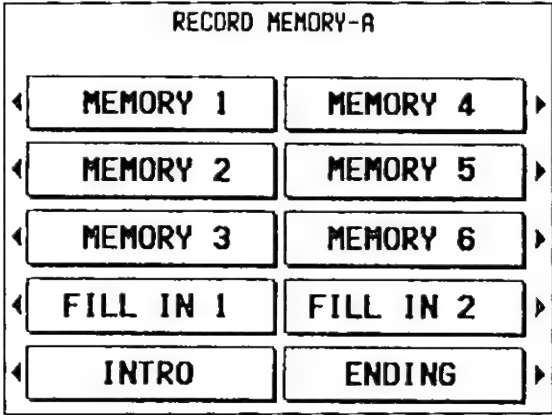
Edit a preset rhythm pattern

- 1. On the **COMPOSER** menu display, select **PATTERN COPY**.
- The display looks similar to the following.

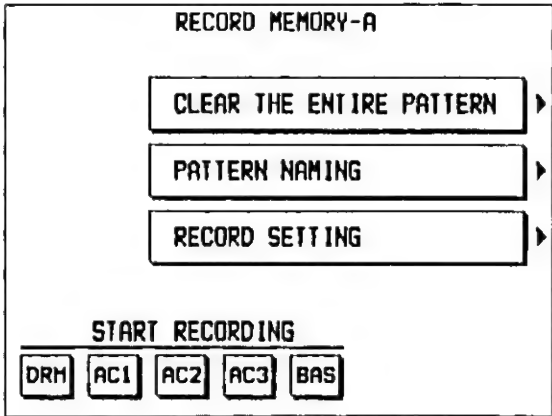


- 2. Select a rhythm group, name and pattern to copy (FROM).
- Use the GRP ^ and v buttons to specify the rhythm group.
- Use the RHY ^ and v buttons to specify the rhythm name.
- Use the PTN ^ and v buttons to specify the rhythm pattern (NORMAL, INTRO, FILL IN 1, FILL IN 2, ENDING, VARIATION, FILL IN 1 VARI or FILL IN 2 VARI).
- You can also select the rhythm group and rhythm name with the panel buttons.
- 3. Select a memory bank and pattern name to copy to (TO).
- Use the MEM ^ and v button to specify the memory bank (A or B).
- Use the PTN ^ and v buttons to specify the pattern (MEMORY 1 to 12, FILL IN 1, FILL IN 2, INTRO or ENDING).
- 4. Press the OK button.
- When copying has been successfully completed, “COPY COMPLETED!” appears on the display.

- 5. Press the **EXIT** button.
- 6. On the **COMPOSER** menu display, select the bank to which you copied the rhythm pattern (the memory bank you selected in step 3).
- Select **RECORD MEMORY-A** or **RECORD MEMORY-B**.
- The display looks similar to the following.



- 7. Select the pattern name to which you copied the pattern (the pattern name you selected in step 3).
- The display looks similar to the following.



Practical applications

8. If you wish to name your new rhythm pattern, select **PATTERN NAMING**.
- **FILL IN**, **INTRO** and **ENDING** patterns cannot be named.
 - If you do not input a name for your rhythm pattern, the name becomes the same as the original rhythm from which you copied.
 - The display looks similar to the following.

RECORD MEMORY-A: PATTERN NAMING

Please enter the name
of your new pattern

DANCES

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
P	Q	R	S	T	U	V	W	X	Y	Z	a	b	c	d
e	f	g	h	i	j	k	l	m	n	o	p	q	r	s
t	u	v	w	x	y	z	0	1	2	3	4	5	6	7
8	9	!	"	#	\$	%	&	'	()	+	-	*	/
=	.	:	;	?	^	~	`		~	<	>	[]	{
}														

POSITION

< >

ABC · · · { } < >

< >

CLR

A/a

9. Type a new name for your rhythm pattern (up to 13 characters).
- Use the **POSITION** **<** and **>** buttons to highlight the character position in the name box. Use the **ABC ··· { } < >** buttons to select the character. Repeat these steps to type the whole name.
 - To erase the name, press the **CLR** button.
 - Use the **A/a** button to switch between upper case and lower case characters.
10. Press the **EXIT** button.
- The display returns to the previous display.

11. In the **START RECORDING** area on the display, select the rhythm part you want to record first.

DRM: **DRUMS**
AC1: **ACCOMP 1**
AC2: **ACCOMP 2**
AC3: **ACCOMP 3**
BAS: **BASS**

- The pattern you copied and the metronome sound start, and recording begins. (Refer to page 99.)

Create a completely new rhythm

Here are the preparatory steps to compose a completely new rhythm from scratch.

1. On the **COMPOSER** menu display, select a bank in which to record the rhythm.
- Select **RECORD MEMORY-A** or **RECORD MEMORY-B**.
 - The display looks similar to the following.

RECORD MEMORY-A

MEMORY 1	MEMORY 4
MEMORY 2	MEMORY 5
MEMORY 3	MEMORY 6
FILL IN 1	FILL IN 2
INTRO	ENDING

2. Specify the pattern you are going to create.
- The display looks similar to the following.

RECORD MEMORY-A

CLEAR THE ENTIRE PATTERN

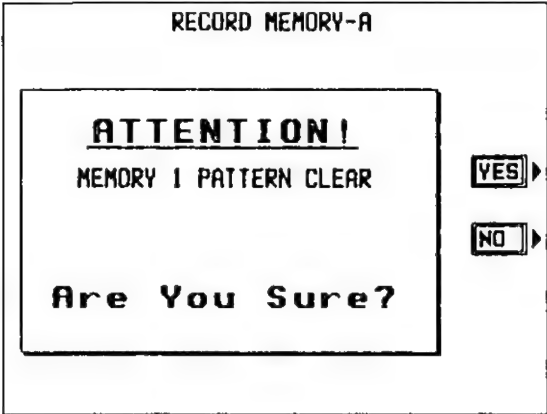
PATTERN NAMING

RECORD SETTING

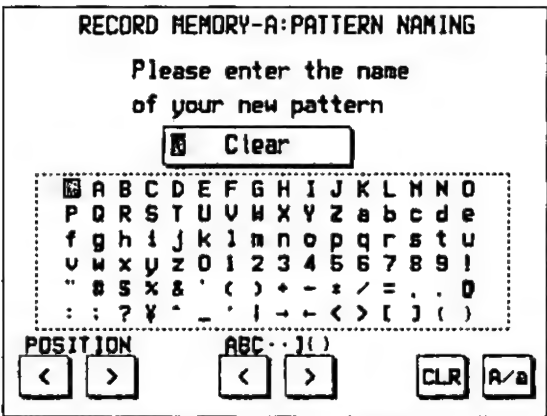
START RECORDING

DRM AC1 AC2 AC3 BAS

- 3. Press the **CLEAR THE ENTIRE PATTERN** button.
- The following confirmation display appears. Press the **YES** button to execute the function, or press the **NO** button to cancel the function.



- 4. Select **PATTERN NAMING**.
- **FILL IN**, **INTRO** and **ENDING** patterns cannot be named.
- The display looks similar to the following.



- 6. Press the **EXIT** button.
- The display returns to the previous display.
- 7. Adjust the various recording settings. (Refer to the following section on "Recording settings.")
- 8. When all the settings have been completed, press the **EXIT** button.
- The display returns to the previous display.
- 9. In the **START RECORDING** area on the display, select the rhythm part you want to record first.

DRM: **DRUMS**
AC1: **ACCOMP 1**
AC2: **ACCOMP 2**
AC3: **ACCOMP 3**
BAS: **BASS**
- The metronome sound starts, and recording begins. (Refer to page 99.)

- 5. Type a name for your rhythm pattern (up to 13 characters).
- Use the **POSITION <** and **>** buttons to highlight the character position in the name box. Use the **ABC... [{ } <** and **>** buttons to select the character. Repeat these steps to type the whole name.
- To erase the name, press the **CLR** button.
- Use the **A/a** button to switch between upper case and lower case characters.

Recording settings

Press the RECORD SETTING button.

RECORD MEMORY-A: SETTING	
MEASURE & TIME SIGNATURE	
MEASURE	: 4
TIME SIGNATURE	: 4/4 (ENABLE)
RECORD SETTING	
KEY	: C
CHORD	: MAJOR
BASS TYPE	: NORMAL
ACCOMP TYPE	: 7TH
FILL IN SELECT (4/4)	
GROUP	: TRAD
PATTERN	: Organ Fox

FILL IN
SELECT

MEAS
↑
↓

TIME
↑
↓

KEY
↑
↓

CHD
↑
↓

BASS
↑
↓

ACMP
↑
↓

GRP
↑
↓

PTN
↑
↓

■ MEASURE & TIME SIGNATURE

MEASURE

Use the MEAS \wedge and \vee buttons to specify the number of measures in your repeating pattern (1 to 8).

TIME SIGNATURE

Use the TIME \wedge and \vee buttons to specify the time signature (1/4 to 8/4).

- These settings can be adjusted only when the pattern was cleared by the CLEAR THE ENTIRE PATTERN function.

■ RECORD SETTING

KEY

Use the KEY \wedge and \vee buttons to specify the root note of the chords you wish to record.

CHORD

Use the CHD \wedge and \vee buttons to specify the type of chord you wish to record (MINOR or MAJOR).

BASS TYPE

Use the BASS \wedge and \vee buttons to specify the type of phrase progression for the **BASS** part (NORMAL or 7TH).

ACCOMP TYPE

Use the ACMP \wedge and \vee buttons to specify to type of phrase progression for the **ACCOMP** parts (NORMAL or 7TH).

■ FILL IN SELECT

You can select fill-in, intro and ending patterns from a preset rhythm pattern. These preset patterns are produced when a **FILL IN** button or the **INTRO & ENDING** button is pressed during playback of your new rhythm pattern.

GROUP

Use the GRP \wedge and \vee buttons to specify the rhythm group.

PATTERN

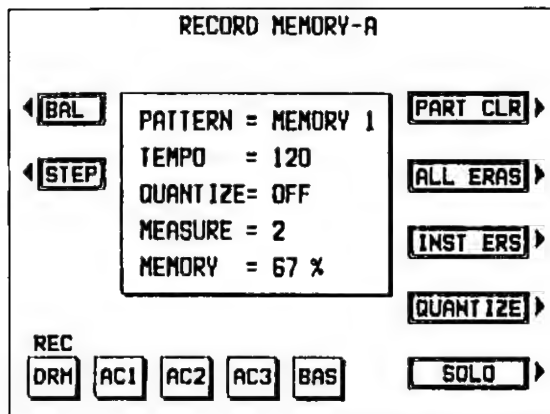
Use the PTN \wedge and \vee buttons to specify the rhythm name.

- This setting is effective only when the **COMPOSER** mode is set to the NORMAL MODE. (Refer to page 102.)
- If you changed the settings in the FILL IN SELECT area on the display, press the FILL IN SELECT button. When the settings have been successfully stored, "COPY COMPLETED!" appears on the display.
- You cannot select a rhythm with a time signature different from that of the TIME SIGNATURE you specified.

Record your rhythm pattern

Store each part of the rhythm pattern as you perform it on the keyboard.

Recording procedure



1. Adjust the tempo.

- The tempo can be freely adjusted when you play back the rhythm pattern, so record at the tempo which is easiest for you to play.

2. Select the sound.

- For the **DRUMS** part, select sounds from the **KEYBOARD PERCUSSION** sound group.
- For the **ACCOMP 1**, **ACCOMP 2**, and **ACCOMP 3** parts, select sounds from the **LOWER SOUND GROUP**. For the **BASS** part, select sounds from the **BASS PEDALS** sound group.
- Only one sound can be selected for each part, and it cannot change in the middle of the pattern.

■ The display during recording

BAL

If you wish to adjust the volume of each part during recording, press the BAL button. The PART BALANCE display appears. Adjust the volume of each part.

STEP

When you press this button, the display changes to the STEP RECORD display, on which you can store the notes one by one. (Refer to page 100.)

PART CLR

Press this button if you wish to erase all recorded contents of the currently selected part.

ALL ERAS

The performance recorded in the selected part is erased for as long as this button is pressed.

3. Record the part on the lower keyboard.



- The specified number of measures are repeatedly played back, during which time any newly played notes are added to those already recorded. The current measure number is shown on the display as "MEASURE=".
 - Record the performance in C major for correct chord progressions during playback. To record the performance in a different scale, specify a KEY and CHORD when you adjust the recording settings (page 98).
 - The SUSTAIN on/off is also recorded (except for the DRM part).
- When you have finished recording one part, use the part buttons below the display to select the next part to record.
 - Repeat steps 1 through 4 to record all the parts of the rhythm.
 - If you wish to continue creating other patterns, press the EXIT button to go back to the pattern selection display.
 - When you have finished recording the rhythm, press the **COMPOSER** button to turn it off.

INST ERS

When the DRM part is selected, the DRM part can be cleared instrument by instrument. Hold down this button and specify the instrument sound to be deleted by pressing the corresponding instrument key on the keyboard, after which only the specified instrument will be erased for as long as this button is kept pressed.

QUANTIZE

Set the desired quantize level to smooth out any unevenness in the timing of your performance. Each time this button is pressed, the indicated level changes. The quantize level is shown as "QUANTIZE=". Select from $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{1}{8}$, $\frac{1}{16}$. (A 3 denotes a triplet-type note.)

SOLO

When you press this button while you are recording, only the part which is currently being recorded is played back. When SOLO is on, a MUTE mark is shown above the other part names on the display.

- To turn off the SOLO function, press this button again.

■ Maximum simultaneous tones

The maximum number of notes which can sound simultaneously for each part is 8. Even if you record more notes at one timing, only 8 are produced when the pattern is played back.

Playback

1. In the **RHYTHM GROUP** section, select the bank in which the desired rhythm is stored (**COMPOSER A** or **COMPOSER B**).



- The list of available rhythms is shown on the display.

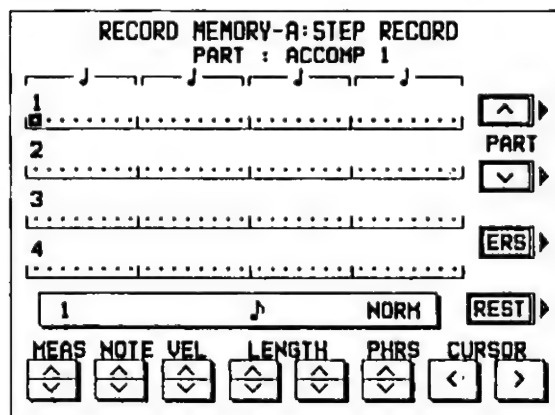
2. Select the desired rhythm from the list on the display.
3. Press the **START/STOP** button.
 - The **DRUMS** part begins to play back.
 - The **BASS** and **ACCOMP** parts are played back when you use the **AUTO PLAY CHORD**.

Step Record

Use STEP RECORD to store the notes one-by-one on the display. This is a convenient way to store complicated patterns that are difficult to play.

Recording procedure

1. While you are recording, press the STEP button.
 - The display changes to the STEP RECORD display similar to the following.



2. Use the MEAS buttons to select the measure you wish to record.
 - This step is not necessary if you are recording from measure 1 of a blank part.

3. Use the CURSOR < and > buttons to move the cursor to the note position (dot) you are going to store.
 - Each dot represents one-eighth of a quarter-note (a thirty-second note).
 - When storing triplets, it may not be possible to match the timing exactly with the 1/32-note steps. However, if you select triplet-type notes for the note length (LENGTH) in step 4 below, the timing is automatically corrected.
4. Use the left LENGTH ^ and v buttons to specify the note value. Select from ♩₃, ♩, ♩₃, ♩, ♩₃, ♩, ♩₃, ♩, .., .. × 2 to 4. (A 3 denotes a triplet-type note.)
 - For note values other than these, use the right LENGTH ^ and v buttons to specify the note value to be added to that which you specified with the left buttons.

Example: To record a dotted quarter-note (♩.)

♩ + ♩

5. Use the PHRS \wedge and \vee buttons to specify the actual length of the produced sound for the desired legato or staccato effect.

TENU (tenuto): Sound is produced for
100% of the note length.

NORM (normal): 80%

STAC (staccato): 50%

CUTT (cutting): 25%

6. Specify the pitch and velocity of the note by playing the keyboard.

- The dot on the display where the note is stored changes to a * mark.
- When recording chords, you can store multiple notes at one position.

REST

To store a rest, after specifying the note LENGTH, press the REST button.

- Points at which nothing is stored are read as rests.

ERS

If you make a mistake, move the cursor to the error, and after displaying the data you wish to erase, press this button.

7. Repeat steps 3 through 6 to continue storing notes.

- To record a different part, use the PART buttons to select another part.
- You may decide to record one part in realtime and another part in the STEP RECORD mode. You can easily switch between the two modes any time during recording. To return to the realtime recording display while in the STEP RECORD mode, press the EXIT button.

Correcting the data

1. In the STEP RECORD mode, specify the part you wish to correct.
2. Use the MEAS buttons to go to the measure you wish to modify. Use the CURSOR buttons to move the cursor to the point you wish to edit.
 - The data stored at that point is shown on the display.
 - When a chord is recorded, a different note in the chord is displayed each time a CURSOR button is pressed.
3. Correct the data.

Performance data

NOTE data (note pitch) and VEL data (how hard the key was played), etc. are displayed. Use the relevant buttons to correct the data as desired.

Sound data

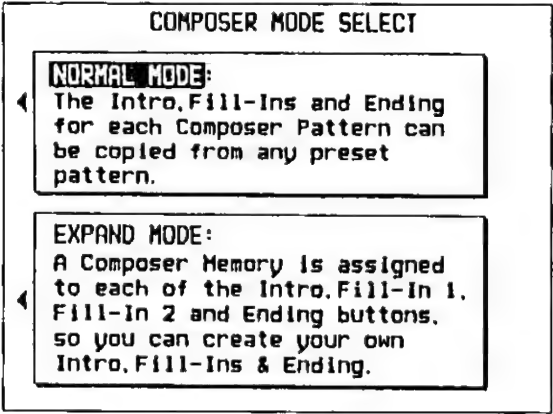
The name of the sound is displayed. Change the sound as desired (the sound setting display is interposed on the current display).

- Press the ERS button to erase the data which is displayed.

Composer Mode

Two playback modes are available for you to choose from. If you wish to use the intro, fill-in and ending patterns from a preset rhythm when you play back your new rhythm pattern, select NORMAL MODE. For creating and playing back your original intro, fill-in and ending patterns, select EXPAND MODE.

- 1. On the **COMPOSER** menu display, select **MODE SELECT**.
- The display changes to the following.



- 2. Use the buttons to the left of the display to select the mode.

NORMAL MODE

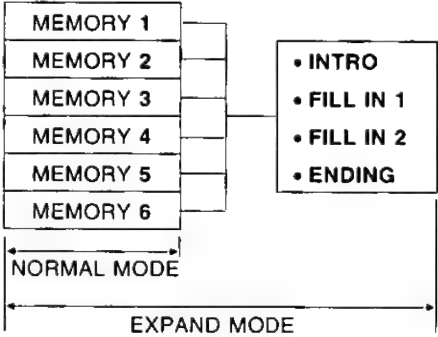
When a **FILL IN** button or the **INTRO & ENDING** button is pressed during playback, the corresponding pattern for a preset rhythm is played back. The rhythm which is played back is the one you specified for **FILL IN SELECT** on the **RECORD SETTING** display (page 98).

EXPAND MODE

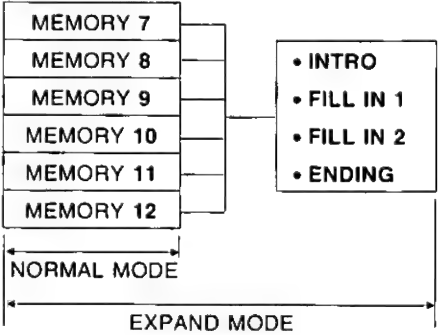
When a **FILL IN** button or the **INTRO & ENDING** button is pressed during playback, the corresponding pattern you created is played back.

- Only one each **FILL IN 1**, **FILL IN 2**, **INTRO** and **ENDING** pattern can be created for each of the two banks (**COMPOSER A** and **COMPOSER B**). The fill-in patterns, etc. for each bank are used for all the basic rhythms in the same bank.

<Bank A>



<Bank B>



Practical applications

Part V Disk Drive

The Disk Drive enables you to store **COMPOSER** memories and **SEQUENCER** data etc. for future use.

Internal memory and Disk Drive

The storable internal memory is fixed at a limited capacity, but this external memory device expands the storable memory infinitely.

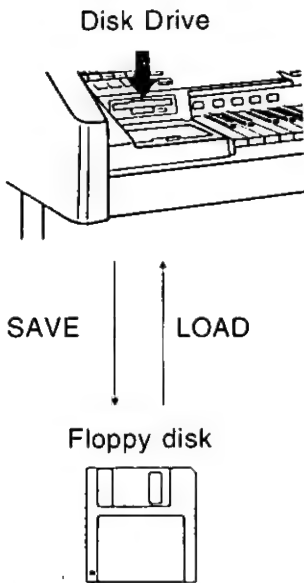
You may choose to store only **SEQUENCER** or **COMPOSER** data, for example, and you can specify exactly what kind of data you wish to load into your instrument's memory from the disk.

- You can use 3.5 inch 2DD or 2HD disks; however, 2HD disks formatted as 2DD cannot be used.
- Specific formats are handled as follows.

		SAVE	LOAD
TECHNICS File FORMAT		○	○
Standard MIDI File	FORMAT 0	○	○
	FORMAT 1	×	○

FORMAT 0: There is one track on the disk, and it contains the 16 MIDI channels.

FORMAT 1: There is an unlimited number of tracks on the disk, each of which can contain the 16 MIDI channels.



Technics: Maximum 20 files
SMF: Maximum 40 performances

■ Playback of commercial software

Disks recorded using the Disk Drive of this instrument can, of course, be played back on your organ. But this instrument also reads song data from disks recorded in the Standard MIDI File format, enabling you to play commercial song disks on this instrument. In addition, by saving this instrument's **SEQUENCER** data in the Standard MIDI File format, you can play it back on an external sequencer.

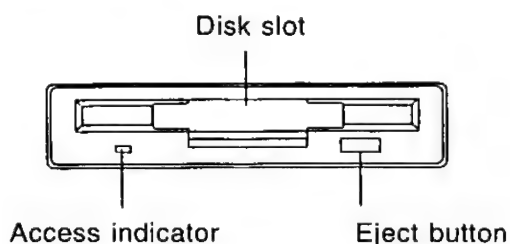
About Standard MIDI Files

"Standard MIDI File" is a standardized format which makes it possible for music data to be exchanged among different sequencers. Data stored in this format on sequencers of different models can be played back on this instrument, and vice versa.

- Only files with the ".MID" extension can be loaded.
- No more than 128 KB of data can be loaded into this instrument.

Warning: Standard MIDI Files ensure the compatibility of data such as key on, key off, velocity, program number. It does not guarantee 100% faithful reproduction of recorded music which is replete with such data. For exact playback of music, it may be necessary to perform extensive adjustments of all the sound generator settings. As you the listener are the ultimate judge of what sounds best, you should perform such adjustments to your satisfaction.

Main parts of the Disk Drive



Eject button

Press to remove the disk from the Disk Drive.

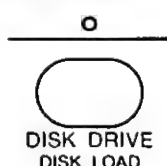
Access indicator

Lights when data is being loaded from or saved to a disk.

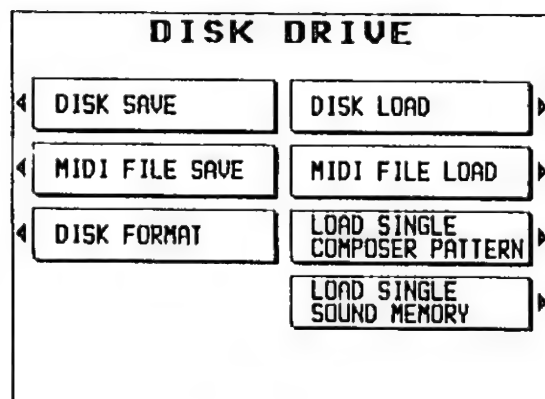
- To prevent data loss, do not remove the disk from the Disk Drive or turn off the power when the access indicator is lit.

Outline of procedure

1. Press the **DISK DRIVE** button to turn it on.



- The display changes to the following.



DISK SAVE (page 107)

Save data from your instrument's memory to a disk.

DISK LOAD (page 105)

Load data from a disk into your instrument's memory.

MIDI FILE LOAD (page 106)

Load song data which was stored in the Standard MIDI File format into your instrument's memory.

MIDI FILE SAVE (page 108)

Save data from your instrument's memory in the Standard MIDI File format to a disk.

DISK FORMAT (page 106)

Format new disks or erase the contents of recorded disks so they can be used by this instrument.

LOAD SINGLE COMPOSER PATTERN

(page 109)

Load **COMPOSER** data from a disk into a specified memory number.

LOAD SINGLE SOUND MEMORY (page 110)

Load **SOUND** data from a disk into a specified memory number.

2. Select the desired menu and follow the procedures on the corresponding display.
 - Press the **EXIT** button to go back to the previous display. To go to another menu, use the **EXIT** button to go back to the menu display.
 - When the **TEMPO/PROGRAM** indicator is lit, it indicates that the dial is available for setting the current function.

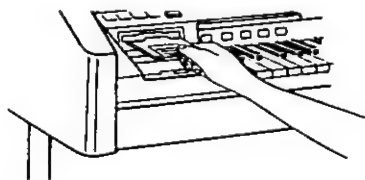
3. When you have finished setting the functions, press the **DISK DRIVE** button to turn it off.

Loading data

Recall (load) the data from the disk to your instrument's memories. Please note that the load procedure causes any data which is currently stored in the relevant memories to be erased.

DISK LOAD

- 1. Insert the disk with the stored data into the Disk Drive. Push it all the way in until you hear a click.



- 2. On the **DISK DRIVE** menu display, select **DISK LOAD**.
 - The display looks similar to the following.

DISK LOAD

LOAD FILE

01 : ABC01.. ALL	11 : CDE01.. CMP
02 : ABC02.. ALL	12 : CDE02.. CMP
03 : ABC03.. ALL	13 : CDE03.. CMP
04 : ABC04.. ALL	14 : CDE04.. CMP
05 : BCD01.. ALL	15 :
06 : BCD02.. ALL	16 : DEF02.. PNL
07 : BCD03.. ALL	17 : DEF03.. PNL
08 :	18 :
09 : BCD05.. SEQ	19 :
10 : BCD06.. SEQ	20 :

LOAD

LOAD OPTION

ALL / SEQUENCER / COMPOSER /
SOUND MEMORY / PANEL MEMORY

^

v

- 4. Specify the kind of data you wish to load from the disk to your instrument.
 - Select the **LOAD OPTION** box, and then use the **^** and **v** buttons to specify the data.
 - The **OPTION** which was specified during the **SAVE** procedure is automatically selected. Skip this step if you do not wish to change the selection. (Refer to page 107.)
 - Select from **ALL**, **SEQUENCER**, **COMPOSER**, **SOUND MEMORY** and **PANEL MEMORY**.
- 5. Press the **LOAD** button.
 - The **DISK LOAD** operation begins.
 - When the operation has been successfully completed, "**COMPLETED!**" is shown on the display.
 - If song data was loaded, you can press the **START/STOP** button to begin playback.

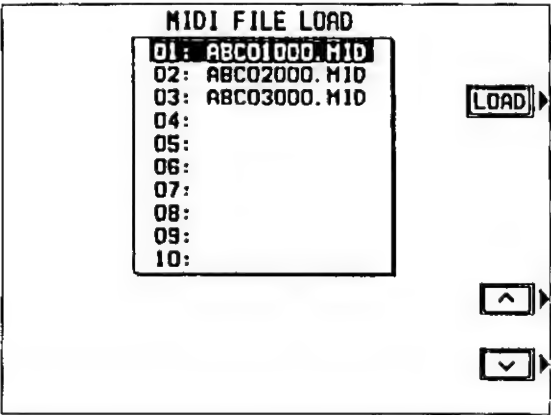
You can also access the **DISK LOAD** display by pressing the **DISK DRIVE** button for a few seconds.

- 3. Select the number of the song file to load.
 - Select the **LOAD FILE** box, and then use the **^** and **v** buttons to select the number.
 - Files in which data is currently stored are indicated by the file name following the file number.

MIDI FILE LOAD

Data which has been saved in the Standard MIDI File format can be loaded into this instrument's SEQUENCER.

- 1. Insert the disk on which data is saved in Standard MIDI File format into the Disk Drive.
- 2. On the **DISK DRIVE** menu display, select MIDI FILE LOAD.
- The display looks similar to the following.



- 3. Use the ^ and v buttons to select the name of the file with the desired data.
- 4. Press the LOAD button.
 - The MIDI FILE LOAD operation begins.
 - When the operation has been successfully completed, "COMPLETED!" is shown on the display.
 - Press the **START/STOP** button to begin playback of the song data.
 - When the MIDI FILE LOAD procedure is executed, the status of this instrument changes to the GENERAL MIDI status. (Refer to page 153.)

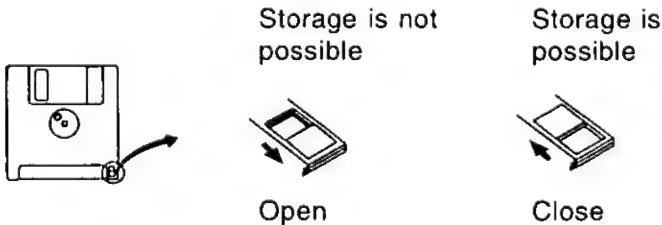
Practical applications

Formatting a disk

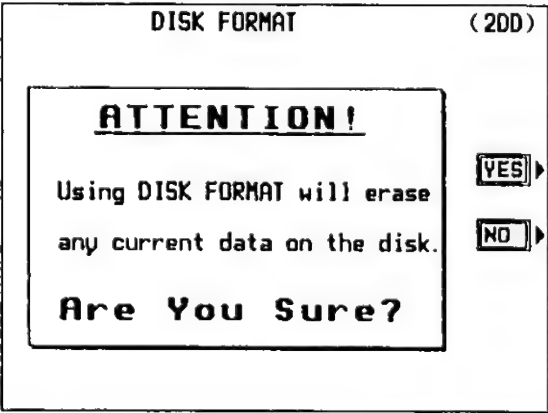
New disks can be used only after they have been formatted. Follow the procedure below to format a new disk or erase the contents of a recorded disk.

DISK FORMAT

- This procedure clears the entire contents of the disk.
- Reformat a disk if it cannot be saved to or loaded from properly because of exposure to a magnetic field.
- You can use 3.5 inch 2DD or 2HD disks; however, 2HD disks formatted as 2DD cannot be used.
- To format the disk, the write-protect window must be closed, as illustrated.



- 1. Insert the disk into the Disk Drive slot. Push it all the way in until you hear a click.
- 2. On the **DISK DRIVE** menu display, select DISK FORMAT.
- The display changes to the following.



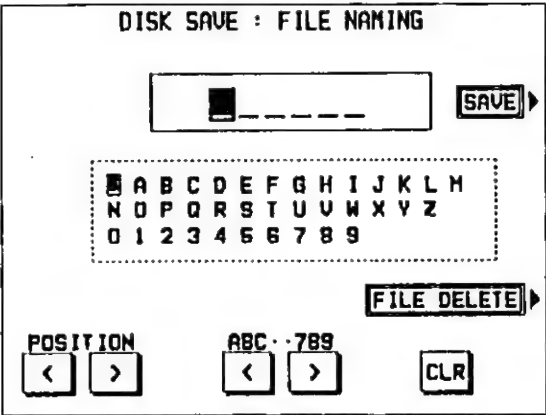
- 3. Press the YES button to format the disk, or press the NO button to cancel the format.
- After about one minute, formatting is completed and "COMPLETED!" is shown on the display.

Saving data

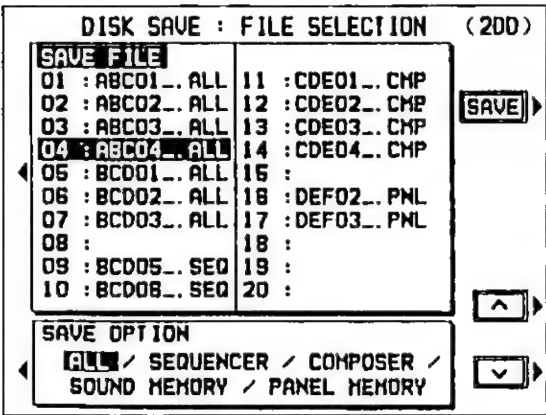
Use the Disk Drive to save the recorded data and panel settings on a disk. A formatted disk should be in place in the Disk Drive.

DISK SAVE

- On the **DISK DRIVE** menu display, select **DISK SAVE**.
- The display changes to the following.



- Type a name for the new data file (up to 6 characters).
 - Use the **POSITION** buttons to highlight the character position in the name box. Use the **ABC-789** buttons to select the alphanumeric character. Repeat these steps to type the whole name.
 - To erase the name, press the **CLR** button.
- Press the **SAVE** button.
 - The display looks similar to the following.



- Select the file number in which to save the data (01 to 20).
 - Select the **SAVE FILE** box, and then use the **^** and **v** buttons to select the file number.
 - Files in which data is currently stored are indicated by the file name following the file number.
 - The maximum number of songs which can be saved may be less than 20 if you are saving many songs which use a lot of memory.
 - The maximum number of songs which can be saved is 10 if you are saving only songs with the **SAVE OPTION** set to **ALL**.
- Specify the kind of data you wish to store in the data file on the disk.
 - Select the **SAVE OPTION** box, and then use the **^** and **v** buttons to specify the kind of data.
- ALL <ALL>**
All the data from this instrument is saved.
- SEQUENCER <SEQ>**
Only data from the **SEQUENCER**
- COMPOSER <CMP>**
Only data from the **COMPOSER**
- SOUND MEMORY <SND>**
Only data stored in the **SOUND** memories
- PANEL MEMORY <PNL>**
Only data stored in the **PANEL MEMORY**
- The abbreviated indication (in **< >** brackets) for the selected data type appears after the file name.
- Press the **SAVE** button.
 - When the operation has been successfully completed, "COMPLETED!" is shown on the display.
 - If you attempt to save data to a file number in which data is currently saved, the display changes to the confirmation display. Press the **NO** button if you wish to cancel the procedure. When the **YES** button is pressed, the **DISK SAVE** operation begins.

■ FILE delete

To erase a song from a disk, on the FILE NAMING display, press the FILE DELETE button. Then on the FILE SELECTION display, select the number of the song you wish to erase, and press the DEL button. The display changes to the confirmation display. Press the YES button to erase the song, or press the NO button to cancel the procedure.

MIDI FILE SAVE

The data from this instrument's **SEQUENCER** can be saved in the Standard MIDI File format.

- What you can save in the Standard MIDI File format is ordinary performance data, such as note data. Data which is specific to Technics instruments (such as **SEQUENCER** data for the chord and rhythm parts, **COMPOSER** data, **PANEL MEMORY** data, etc.) is not saved. If you wish to also save the special Technics data, first use the DISK SAVE procedure to save the data to a disk, and then follow the MIDI FILE SAVE below.

1. On the **DISK DRIVE** menu display, select MIDI FILE SAVE.

- The display changes to the FILE NAMING display.

2. Type a name for the new data file (up to 8 characters).

- Use the POSITION buttons to highlight the character position in the name box. Use the ABC·789 buttons to select the alphanumeric character. Repeat these steps to type the whole name.
- To erase the name, press the CLR button.

3. Press the SAVE button.

- The display looks similar to the following.

MIDI FILE SAVE : FILE SELECTION (2DD)

01: ABC01000.MID
02: ABC02000.MID
03: ABC03000.MID
04:
05:
06:
07:
08:
09:
10:

SAVE →

← PANEL HEADER : OFF →

← ONE MEASURE SPACE: OFF →

4. Use the ^ and v buttons to select the name of the file in which to save the data.

- To save in a new file, select a blank line.

5. Press the SAVE button.

- When the operation has been successfully completed, "COMPLETED!" is shown on the display.
- If you attempt to save data to a file name in which data is currently saved, the display changes to the confirmation display. Press the NO button if you wish to cancel the procedure. When the YES button is pressed, the MIDI FILE SAVE operation begins.

■ PANEL HEADER

You can save the sound, volume and other settings for each part as data at the beginning of the file. Select YES to save the data, or NO if you do not wish to have the data saved at the file beginning.

■ ONE MEASURE SPACE

When there is various data other than performance data stored at the beginning of a file, the start of playback may be delayed. This can be avoided by inserting a one-measure space before the beginning of the performance. Select ON to insert a one-measure space, or OFF if you do not wish to insert the space.

- When set to ON, a space is added each time a file is saved. Therefore, if you have already saved a file once with this option set to ON, please set it to OFF each time the file is subsequently saved.

■ FILE delete

To erase a song from a disk, on the FILE NAMING display, press the FILE DELETE button. Then on the FILE SELECTION display, select the number of the song you wish to erase, and press the DEL button. The display changes to the confirmation display. Press the YES button to erase the song, or press the NO button to cancel the procedure.

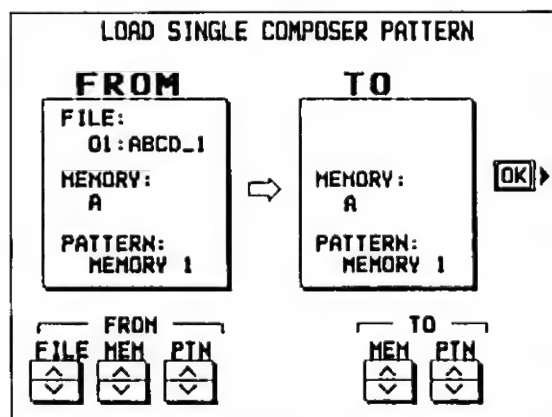
Single data type load

You can load **COMPOSER** or **SOUND** data into the memories you specify.

LOAD SINGLE COMPOSER PATTERN

Load the desired **COMPOSER** data from a disk into a specific **COMPOSER** memory.

1. Insert the disk with the stored **COMPOSER** data into the Disk Drive.
2. On the **DISK DRIVE** menu display, select **LOAD SINGLE COMPOSER PATTERN**.
 - The display looks similar to the following.



3. Select a file, memory name and pattern to load from the disk (FROM).
 - FILE: Use the \wedge and \vee buttons to specify the file number on the disk.
 - MEM: Use the \wedge and \vee buttons to select the memory bank (A or B).
 - PTN: Use the \wedge and \vee buttons to specify the pattern name.
4. Select the memory bank and pattern to load to (TO).
 - MEM: Use the \wedge and \vee buttons to select the memory bank (A or B).
 - PTN: Use the \wedge and \vee buttons to specify the pattern name.
5. Press the OK button.
 - When the operation has been successfully completed, "COMPLETED!" is shown on the display.
 - The **LOAD SINGLE COMPOSER PATTERN** procedure can also be begun from the **COMPOSER** menu display. (Refer to page 94.)

LOAD SINGLE SOUND MEMORY

Load the desired **SOUND** data from a disk into a specific **SOUND** memory.

1. Insert the disk with the stored **SOUND** data into the Disk Drive.
2. On the **DISK DRIVE** menu display, select **LOAD SINGLE SOUND MEMORY**.
 - The display looks similar to the following.

LOAD SINGLE SOUND MEMORY

FROM

FILE:
01:ABCD_1

GROUP:
UPPER

MEMORY:
A-1

⇒

TO

GROUP:
UPPER

MEMORY:
A-1
Grand Piano

OK

▶

FROM

FILE
↑
↓

GRP
↑
↓

MEM
↑
↓

TO

GRP
↑
↓

MEM
↑
↓

3. Select a file and memory name to load from the disk (**FROM**).

FILE: Use the \wedge and \vee buttons to specify the file number on the disk.

GRP: Use the \wedge and \vee buttons to select the memory group.

MEM: Use the \wedge and \vee buttons to select the memory bank (A or B).

4. Select the memory to load to (**TO**).

GRP: Use the \wedge and \vee buttons to select the memory group.

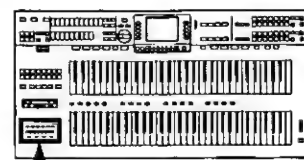
MEM: Use the \wedge and \vee buttons to select the memory bank.

5. Press the OK button.

- When the operation has been successfully completed, "COMPLETED!" is shown on the display.

Part VI Adjusting the sounds

Sound mode



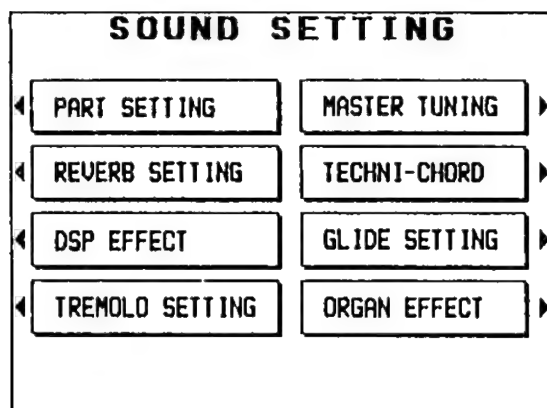
The **SOUND** mode is used for making fine adjustments to the functions related to sound, such as tone, volume and effects.

SOUND menu

1. Press the **SOUND** button to turn it on.



- The display changes to the following.



- Refer to the summary of **SOUND** menu items on the next page.

2. Select the desired menu and follow the procedures on the corresponding setting display.
 - The functions and their adjustment are explained in detail on the following pages.
 - When the **TEMPO/PROGRAM** indicator is lit, it indicates that the dial is available for setting the current function.
3. When you have finished setting the functions, press the **SOUND** button to turn it off.
 - When the current display is a setting display, you can press the **EXIT** button to go back to the previous display. To show other menus, use the **EXIT** button to return to the **SOUND** menu display and make another selection.

■ A word about parts

The organization of the sound parts is as follows.

Normal parts

UPPER SOUND 1 to 3, UPPER ORGAN, LOWER SOUND 1 to 3, LOWER ORGAN, BASS, PART 8 to 15.

- PART 16 is reserved for **KEYBOARD PERCUSSION**.
- PART 8 to 16 are used in **SEQUENCER** and **MIDI** functions.

AUTO PLAY CHORD parts

ACCOMP 1, ACCOMP 2, ACCOMP 3, BASS, DRUMS, CHORD.

Other parts

BGS.

■ Summary of the SOUND menu items

PART SETTING (page 113)

Set the various sound attributes for each part.

- **SUSTAIN**: Turn the sustain on or off and adjust the sustain length for each part.
- **BRILLIANCE**: Adjust the brilliance for each part.
- **REVERB**: Turn the reverb on or off for each part.
- **DSP EFFECT**: Turn the **DSP EFFECT** on or off for each part.
- **PAN**: Adjust the stereo balance of each part.
- **KEY SHIFT**: Adjust the key of each part in semitone increments.
- **VOLUME**: Adjust the volume for each part.
- **TUNING**: Fine-tune the pitch of each part.
- **BEND RANGE**: Set the pitch range when MIDI pitch bend data is received.
- **ASSIGN MODE**: Specify whether polyphonic, monophonic or solo sound is output for each part.

REVERB SETTING (page 117)

Select the type and depth of the **DIGITAL REVERB**.

DSP EFFECT (page 120)

Select the type and degree of the **DSP EFFECT**.

TREMOLO SETTING (page 118)

Adjust the speed or depth of the tremolo.

MASTER TUNING (page 119)

Select the type of tuning for the instrument.

TECHNI-CHORD TYPE (page 119)

Select the **TECHNI-CHORD** harmony style.

GLIDE SETTING (page 120)

Adjust the settings for the glide effect.

ORGAN EFFECT (page 122)

Select the type of **EFFECT** for the **ORGAN** part.

SOLO

The **SOLO** sound is monophonic, which means that only one note can sound at a time. When only a **SOLO** part is selected for the keyboard, the **SOLO** sound is produced for the last key played.

When a **SOLO** part and another part are both selected for one keyboard, however, the **SOLO** sound is produced for the highest key played. This means that you can use the keyboard to play chords with your left hand and a **SOLO**-sound melody with your right hand, for example.

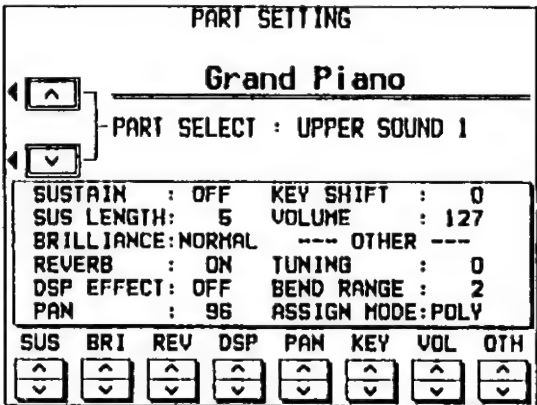
- If the interval between the highest note and the next lower note is more than one whole tone, the **SOLO** sound will not shift to the next lower key when the highest key is released.

Sound setting

Set the various sound attributes for each part.

PART SETTING

- On the **SOUND** menu display, select **PART SETTING**.
 - The display looks similar to the following.



- Use the **^** and **v** buttons to select a part.
 - If necessary, select the sound for the part. (Only **KEYBOARD PERCUSSION** sounds can be selected for PART 16.)
 - The upper portion of the display shows the name of the selected part and the sound assigned to that part. The box in the lower portion of the display shows the status of each attribute for the selected part.

- Use the buttons along the bottom of the display to select the attribute you wish to adjust.

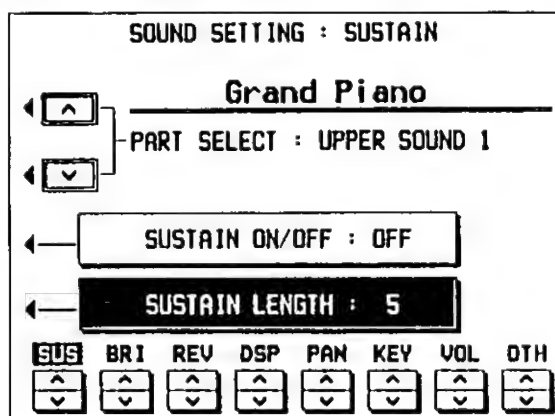
SUS: SUSTAIN
BRI: BRILLIANCE
REV: REVERB
DSP: DSP EFFECT
PAN: PAN
KEY: KEY SHIFT
VOL: VOLUME
OTH: OTHER (TUNING, BEND RANGE, ASSIGN MODE)

 - The display changes in accordance with your selection.
 - Only the **VOLUME** and **REVERB** settings can be adjusted for PART 16.
 - The **SUSTAIN**, **BRILLIANCE**, **PAN**, **KEY SHIFT**, **TUNING**, **BEND RANGE** and **ASSIGN MODE** settings cannot be changed for the **CHORD** part.
- Set each attribute. (Refer to the pages following.)
 - Use the buttons below the display to change the settings for each attribute.
- Repeat steps 2 to 4 for each part as desired.

Practical applications

■ SUSTAIN

Turn the sustain on or off for each part, and specify the length of the sustain.



SUSTAIN ON/OFF

1. Select SUSTAIN ON/OFF.

2. Use the SUS \wedge and \vee buttons to set the sustain to on or off.

SUSTAIN LENGTH

1. Select SUSTAIN LENGTH.

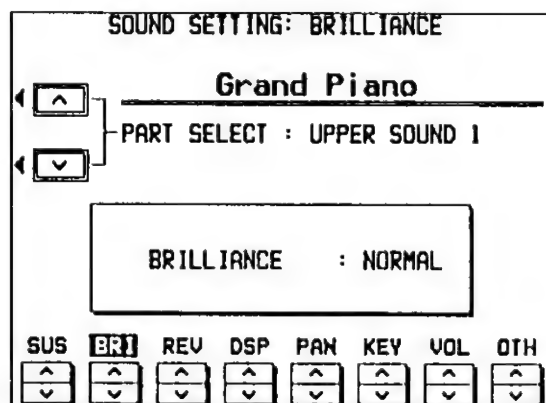
2. Use the SUS \wedge and \vee buttons to adjust the length of the sustain (1 to 8).

- For some sounds, the length of the sustain does not change even if the number is changed.

- To adjust this effect for other parts, use the PART SELECT \wedge and \vee buttons to select another part.

■ BRILLIANCE

Adjust the brilliance.



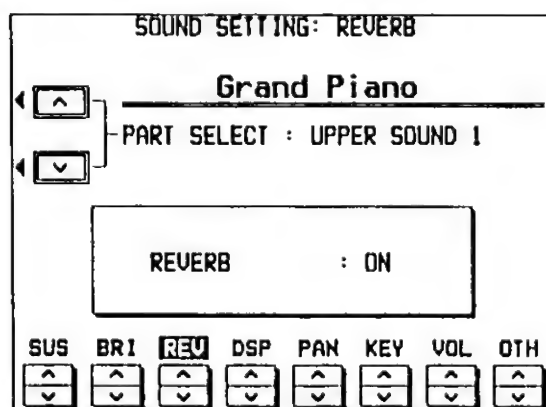
Use the BRI \wedge and \vee buttons to select a brilliance setting.

- Select from MELLOW, NORMAL and BRIGHT.

- To adjust this effect for other parts, use the PART SELECT \wedge and \vee buttons to select another part.

■ REVERB

Turn the reverb on or off.



Use the REV \wedge and \vee buttons to turn the reverb on or off for the part.

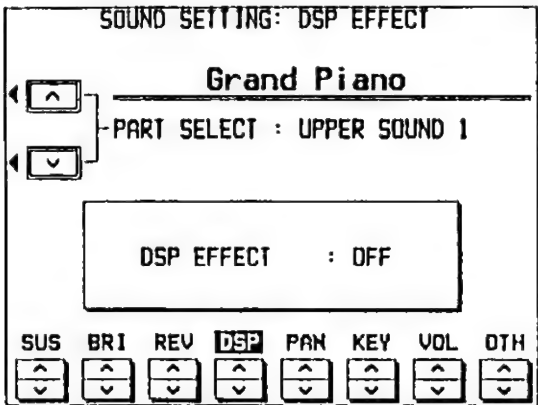
- To adjust this effect for other parts, use the PART SELECT \wedge and \vee buttons to select another part.

■ DSP EFFECT

Turn the **DSP EFFECT** on or off.

Use the **DSP** \wedge and \vee buttons to turn the **DSP EFFECT** on or off for the part.

- To adjust this effect for other parts, use the **PART SELECT** \wedge and \vee buttons to select another part.

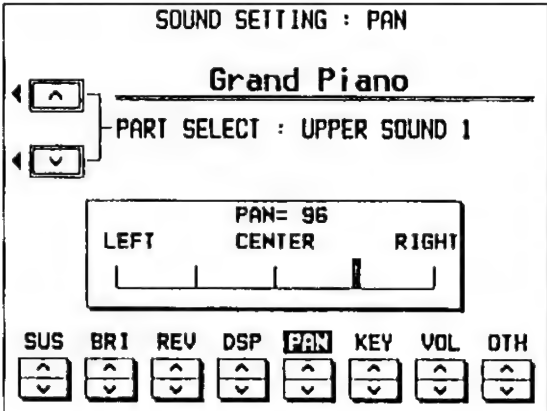


■ PAN

Adjust the stereo balance of each part.

Use the **PAN** \wedge and \vee buttons to adjust the stereo balance (0 to 127).

- At 0 the sound is completely to the left, at 127 completely to the right. At 64, the sound is at the centered.
- A thick vertical line on the display indicates the selected position.
- To adjust this effect for other parts, use the **PART SELECT** \wedge and \vee buttons to select another part.

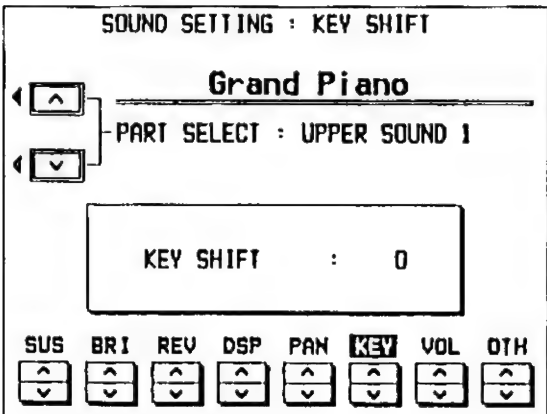


■ KEY SHIFT

The pitch of the part can be shifted up or down.

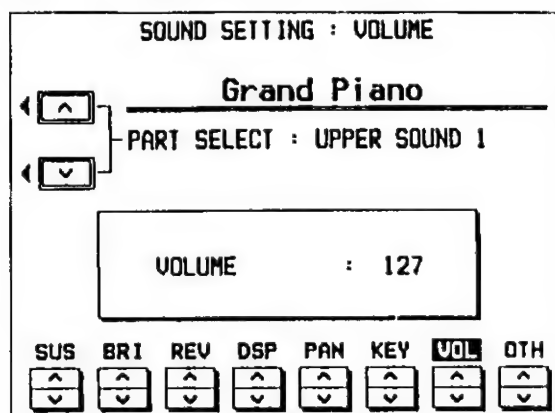
Use the **KEY** \wedge and \vee buttons to specify the amount of key shift (-12 to +12).

- A value of 1 means a shift of one semitone. To raise (or lower) the pitch one octave, set the value to +12 (or -12).
- The \wedge button is used to rise the pitch, and the \vee button to lower the pitch.
- To adjust this effect for other parts, use the **PART SELECT** \wedge and \vee buttons to select another part.



■ VOLUME

Adjust the volume of each part.

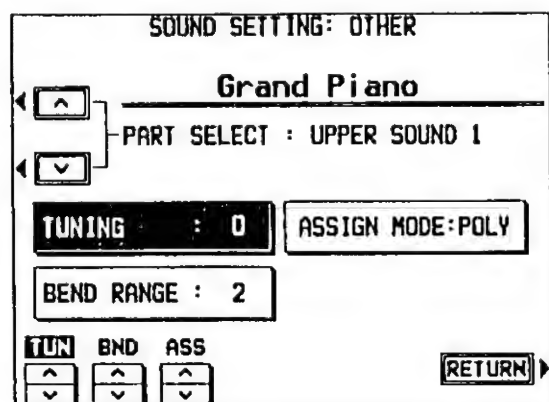


Use the VOL \wedge and \vee buttons to adjust the volume (0 to +127).

- The \wedge button is used to increase the volume, and the \vee button to decrease the volume.
- No sound is produced when the volume setting is 0.
- To adjust VOLUME for other parts, use the PART SELECT \wedge and \vee buttons to select another part.

■ OTHER

Adjust the part settings for the tuning, pitch bend MIDI data reception, and the output mode.



Press the OTH \wedge and \vee buttons.

TUNING

Use the TUN \wedge and \vee buttons to adjust the tuning (-128 to +127).

BEND RANGE

Use the BND \wedge and \vee buttons to set the pitch range when MIDI pitch bend data is received (0 to 12).

- Increments are in semitones.

ASSIGN MODE

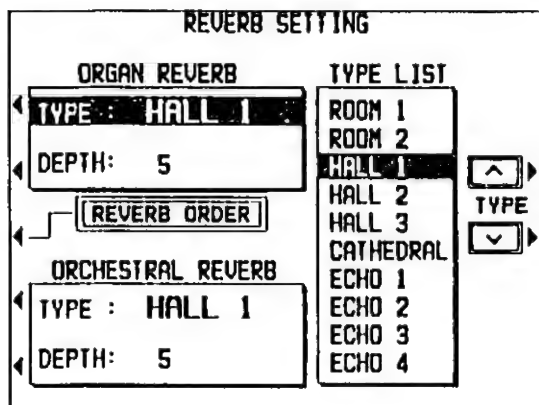
Use the ASS \wedge and \vee buttons to select the output mode for each part (POLY, MONO or SOLO).

- SOLO cannot be selected for the BASS part.
- Press the RETURN button to return to the previous display.

REVERB SETTING

Select the type and depth of the **DIGITAL REVERB**.

- On the **SOUND** menu display, select **REVERB SETTING**.
- The display looks similar to the following.



- Select the item to adjust.

■ ORGAN part reverb setting

Adjust the reverb settings for the **ORGAN** part sounds. You can also specify the order in which reverb and other effects are applied to the sound.

- In the **ORGAN REVERB** box, select **TYPE**.
- Use the **TYPE** \wedge and \vee buttons to select the type of reverb.
- In the **ORGAN REVERB** box, select **DEPTH**.
- Use the **DEPTH** \wedge and \vee buttons to adjust the depth of the reverb (1 to 10).

■ REVERB ORDER

The order in which reverb is applied to the sound can be changed.

- Select **REVERB ORDER**.
 - The display changes.

- Select the desired reverb order.

NORMAL: Sound \rightarrow other effects \rightarrow reverb

SPECIAL: Sound \rightarrow reverb \rightarrow tremolo

- When **SPECIAL** is selected, the organ reverb does not work unless the **TREMOLO** is on.
- When the power to this instrument is turned on, this setting is always set to **NORMAL**.

■ Other part reverb setting

Adjust the reverb setting for parts other than the **ORGAN** part, such as **SOUND GROUP** and **BASS PEDALS**, and the rhythm sounds.

- In the **ORCHESTRAL REVERB** box, select **TYPE**.
- Use the **TYPE** \wedge and \vee buttons to select the type of reverb.
 - Select from the **TYPE LIST** on the display.
- In the **ORCHESTRAL REVERB** box, select **DEPTH**.
- Use the **DEPTH** \wedge and \vee buttons to adjust the depth of the reverb (1 to 10).

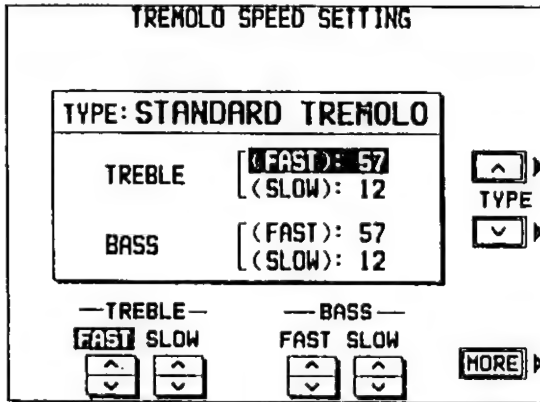
You can also access this display by pressing and holding the **DIGITAL REVERB** button for a few seconds.

- In this case, you can press the **EXIT** button to return to the previous display.

TREMOLO

Tremolo is a rapid oscillation in volume, producing the effect of a rotating speaker. The type of tremolo and how it is applied can be adjusted.

1. On the **SOUND** menu display, select **TREMOLO SETTING**.
 - The display changes to the following.



2. Use the **TYPE** \wedge and \vee buttons to select the type of speaker (STANDARD TREMOLO, THEATRE TREMOLO, U.S. TRAD TREMOLO, EUROPEAN TREMOLO, JAZZ ROTOR, STANDARD ROTOR, THEATRE ROTOR, ROCK ROTOR, TREMULANT 1, 2).
 - ROTOR refers to the number of rotating units in a rotary speaker.
3. Modify the parameters (explained below).
 - Use the buttons below the display to change the value for the respective parameter.
 - Press the **MORE** button to display other parameters.

You can also access this display by pressing and holding the **DIGITAL REVERB** button for a few seconds.

- In this case, you can press the **EXIT** button to return to the previous display.

■ Parameters

STANDARD TREMOLO, THEATRE TREMOLO, U.S. TRAD TREMOLO, EUROPEAN TREMOLO

Like a single-rotor-type speaker.

TREBLE/BASS (FAST)

The speed when the rotor is turning fast.

TREBLE/BASS (SLOW)

The speed when the rotor is turning slowly.

TREBLE/BASS WIND UP

The time it takes to reach the TREBLE/BASS (FAST) speed when the speed is changed from slow to fast.

TREBLE/BASS WIND DOWN

The time it takes to reach the TREBLE/BASS (SLOW) speed when the speed is changed from fast to slow.

DISTORTION

Amount of distortion applied to the sound.

JAZZ ROTOR, STANDARD ROTOR, THEATRE ROTOR, ROCK ROTOR

Like a double-rotor-type speaker.

TREBLE (FAST)

The speed when the treble rotor is turning fast.

TREBLE (SLOW)

The speed when the treble rotor is turning slowly.

BASS (FAST)

The speed when the bass rotor is turning fast.

BASS (SLOW)

The speed when the bass rotor is turning slowly.

TREBLE (WIND UP)

The time it takes for the treble rotor to reach the TREBLE (FAST) speed when the speed is changed from slow to fast.

TREBLE (WIND DOWN)

The time it takes for the treble rotor to reach the TREBLE (SLOW) speed when the speed is changed from fast to slow.

BASS (WIND UP)

The time it takes for the bass rotor to reach the BASS (FAST) speed when the speed is changed from slow to fast.

BASS (WIND DOWN)

The time it take for the bass rotor to reach the BASS (SLOW) speed when the speed is changed from fast to slow.

DISTORTION
Amount of distortion applied to the sound.

TREMULANT 1, 2
This is a distinctive vibrating effect, peculiar to pipe organs, of air flowing through the pipes.

SPEED 1
Speed of effect applied to tab sounds.

SPEED 2
Speed of effect applied to EXTRA TAB VOICES.

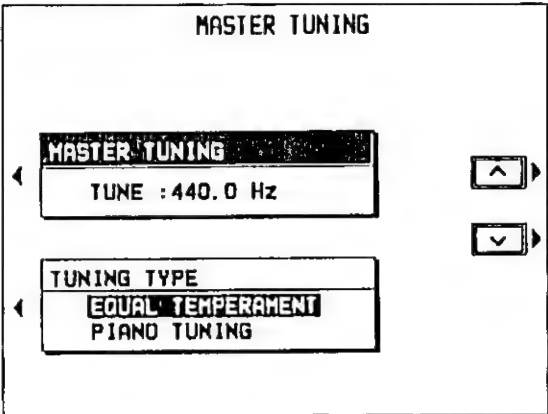
DEPTH 1
Depth of effect applied to tab sounds.

DEPTH 2
Depth of effect applied to EXTRA TAB VOICES.

MASTER TUNING

This setting is used to fine-tune the pitch of the entire instrument. This is convenient when playing with other instruments or with a recorded performance. You can also select from two types of tuning.

- 1. On the **SOUND** menu display, select **MASTER TUNING**.
- The display changes to the following.



- 2. Select **MASTER TUNING**.
- 3. Use the \wedge and \vee buttons to adjust the pitch within a range of 427.3 to 453.0 Hz.
 - The decimal can be set to 0, 3 or 6.

- 4. Select **TUNING TYPE**.
- 5. Use the \wedge and \vee buttons to select the type of tuning.

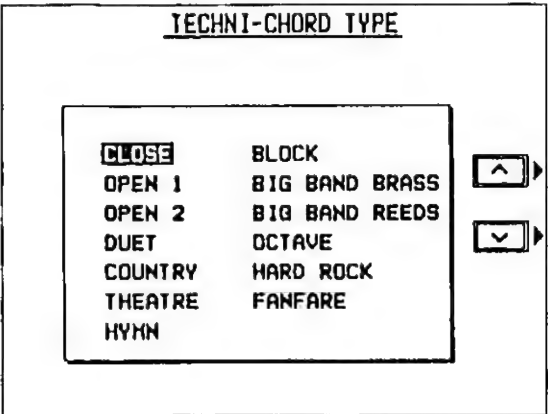
EQUAL TEMPERAMENT
One octave is divided into pitches of equally spaced intervals.

PIANO TUNING
Standard acoustic piano tuning, in which the lower pitches are tuned slightly lower and the higher pitches are tuned slightly higher.

TECHNI-CHORD TYPE

Select the desired harmony style for the **TECHNI-CHORD**.

- 1. On the **SOUND** menu display, select **TECHNI-CHORD**.
- The display changes to the following.



- 2. Use the \wedge and \vee buttons to select the harmony style.
 - When the **OCTAVE**, **HARD ROCK** or **FANFARE** style is selected, the **TECHNI-CHORD** is always active for the upper keyboard.
 - For a detailed explanation of the different harmony styles, refer to the separate "REFERENCE GUIDE" provided.

You can also access this display by pressing and holding the **TECHNI-CHORD** button for a few seconds.

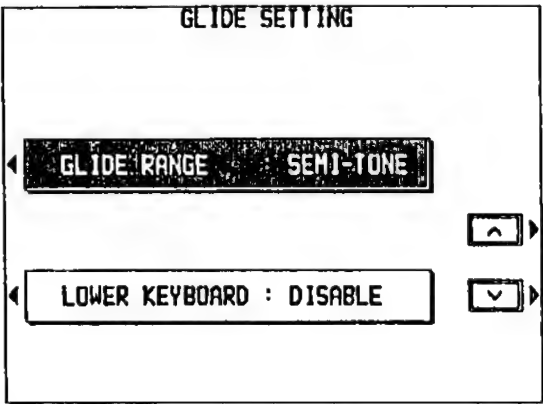
- In this case, you can press the **EXIT** button to return to the previous display.

Practical applications

GLIDE SETTING

Adjust the pitch range of the glide effect, and specify whether the glide effect works for the lower keyboard.

- 1. On the **SOUND** menu display, select GLIDE SETTING.
- The display changes to the following.

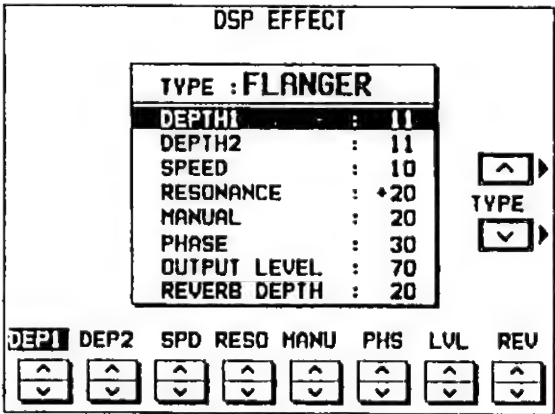


- 2. Select GLIDE RANGE.
- 3. Use the \wedge and \vee buttons to change the setting.
WHOLE TONE
The pitch changes by as much as a whole tone.
SEMI-TONE
The pitch changes by as much as a semitone.
- 4. Select LOWER KEYBOARD.
- 5. Use the \wedge and \vee buttons to enable or disable the glide effect for the lower keyboard.
DISABLE
The glide effect does not work for the lower keyboard.
ENABLE
The glide effect works for the lower keyboard.

DSP EFFECT

Select the type of **DSP EFFECT**, and adjust the depth of the effect.

- 1. On the **SOUND** menu display, select DSP EFFECT.
- The display changes to the following.



- 2. Use the TYPE \wedge and \vee buttons to select the type of effect (CHORUS, FLANGER, PHASER, DISTORTION, OVER DRIVE, EXCITER, DELAY 1, 2).
- 3. Use the buttons below the display to change the parameters of the selected type (explained below).
- When a type of effect is selected, the parameters automatically revert to the factory-preset settings.

You can also access this display by pressing and holding the **DSP EFFECT** button for a few seconds.

- In this case, you can press the **EXIT** button to return to the previous display.

■ Parameters

CHORUS

A natural fullness and richness is achieved by adding a sound of a slightly different pitch to the original sound.

DEPTH

Depth of the modulation.

SPEED

Velocity of the modulation.

OUTPUT LEVEL

Volume of the part to which the effect is applied.

REVERB DEPTH

Output to the reverb.

FLANGER

An undulation is added, giving an intensity to sounds having many overtones (harmonics).

DEPTH 1, 2

Depth of the modulation.

SPEED

Velocity of the modulation.

RESONANCE

Feedback volume (inverted when a minus value).

MANUAL

Center frequency to which the effect is applied.

PHASE

Phase difference between left and right modulation.

OUTPUT LEVEL

Volume of the part to which the effect is applied.

REVERB DEPTH

Output to the reverb.

PHASER

A more distinct undulation effect than FLANGER. Ideal for electric piano type sounds.

DEPTH

Depth of the modulation.

SPEED

Velocity of the modulation.

RESONANCE

Feedback volume (inverted when a minus value).

MANUAL

Center frequency to which the effect is applied.

OUTPUT LEVEL

Volume of the part to which the effect is applied.

REVERB DEPTH

Output to the reverb.

DISTORTION

The sound is very distorted. A powerful effect when applied to a sound which is played solo.

DRIVE

Degree of distortion.

OUTPUT LEVEL

Volume of the part to which the effect is applied.

REVERB DEPTH

Output to the reverb.

OVER DRIVE

A more natural distortion than the above effect, similar to that achieved with a vacuum tube amplifier.

DRIVE

Degree of distortion.

OUTPUT LEVEL

Volume of the part to which the effect is applied.

REVERB DEPTH

Output to the reverb.

EXCITER

Modulation gives a clear outline to the sound.

DRIVE

Degree of distortion.

BOOST LEVEL

Volume emphasis in the upper pitch range.

OUTPUT LEVEL

Volume of the part to which the effect is applied.

REVERB DEPTH

Output to the reverb.

DELAY 1

An echo effect, in which the original sound is repeated after a delay.

DELAY R

Time difference between original sound and the repeat (ms).

DELAY L

Delay time for the L (left) channel (ms).

FEEDBACK R

Feedback volume (inverted when a minus value).

FEEDBACK L

Left feedback volume (inverted when a minus value).

OUTPUT LEVEL

Volume of the part to which the effect is applied.

REVERB DEPTH

Output to the reverb.

DELAY 2

A shorter-type delay than DELAY 1 type.

DELAY R1, 2

Delay time for the R (right) channel (ms).

DELAY L1, 2

Delay time for the L (left) channel (ms).

FEEDBACK R

Right feedback volume (inverted when a minus value).

FEEDBACK L

Left feedback volume (inverted when a minus value).

OUTPUT LEVEL

Volume of the part to which the effect is applied.

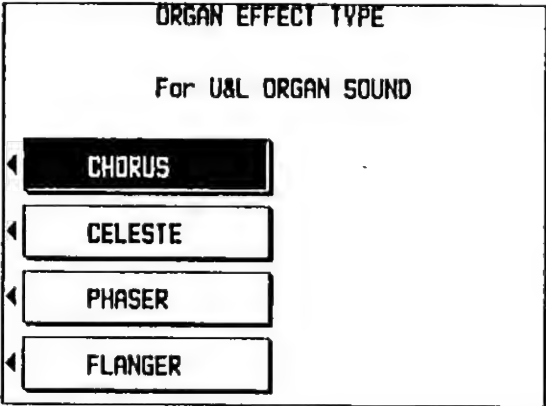
REVERB DEPTH

Output to the reverb.

ORGAN EFFECT

Select the type of EFFECT for the **ORGAN** part.

- 1. On the **SOUND** menu, select **ORGAN EF- FECT**.
- The display changes to the following.

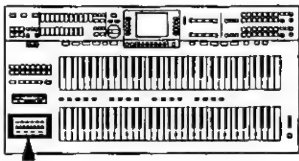


- 2. Use the buttons to the left of the display to select the type of effect.
- You can also access this display by pressing and holding the **EFFECT** button for a few seconds.

Part VII Adjusting the functions

Various functions on your instrument can be custom-set to match your personal tastes and style of play, giving you maximum versatility and control of your instrument.

Outline of procedure



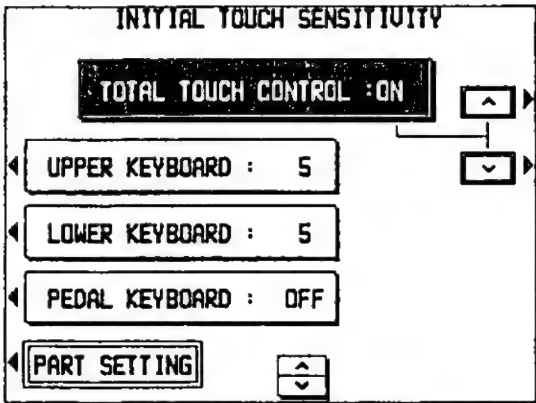
TOUCH

Adjust the touch response settings.

- 1. Specify whether the touch response function works for this instrument. You can also turn touch response on or off for each keyboard, and for each part.



- The display looks similar to the following.



- 2. Set TOTAL TOUCH CONTROL to on or off.
- 3. Adjust the settings for each keyboard and part.
- 4. When you have finished adjusting the functions, press the **TOUCH** button to turn it off.

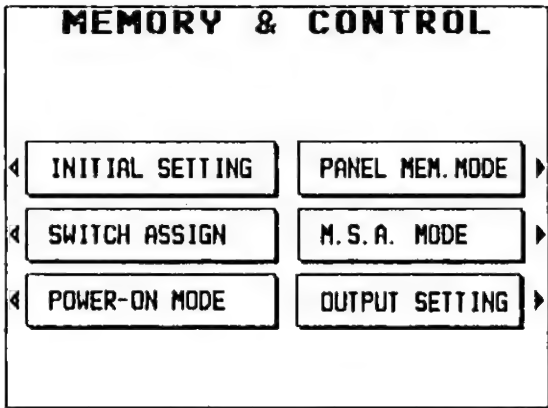
CONTROL

Make various settings related to the operation of your instrument.

- 1. Press the **MEM & CTRL** button to turn it on.



- The following menu display appears.



- SWITCH ASSIGN** (page 125)
Assign the desired functions to the foot switches, knee lever and full bass pedal.
- POWER-ON MODE** (page 126)
Specify the sound settings which are in effect when the power to this instrument is turned on.
- OUTPUT SETTING** (page 127)
Specify whether the **ORGAN**, **BASS** and **DRUMS** part sounds are output separately.

Practical applications

- Information regarding the following settings can be found on the pages indicated.

INITIAL SETTING	page 154
PANEL MEM. MODE	page 53
M.S.A. MODE	page 66

2. Select the desired menu and follow the procedures on the corresponding setting display.
 - Press the **EXIT** button to go back to the previous display. To go to another menu, use the **EXIT** button to go back to the menu display.
 - When the **TEMPO/PROGRAM** indicator is lit, it indicates that the dial is available for setting the current function.
3. When you have finished setting the functions, press the **MEM & CTRL** button again to turn it off.

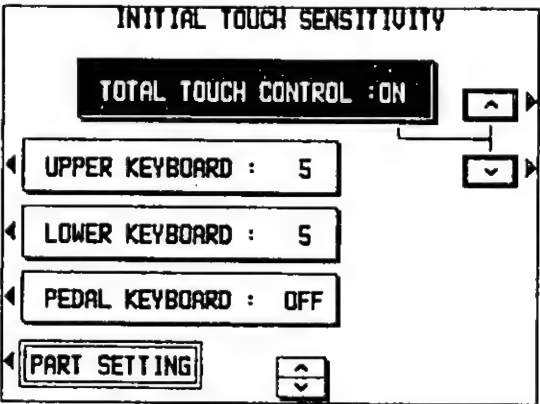
Touch functions

Select the item and perform the setting procedures.

INITIAL TOUCH SENSITIVITY

Adjust the degree of touch response for the upper keyboard, the lower keyboard and the pedal keyboard.

1. Press the **TOUCH** button to turn it on.
 - The display looks similar to the following.

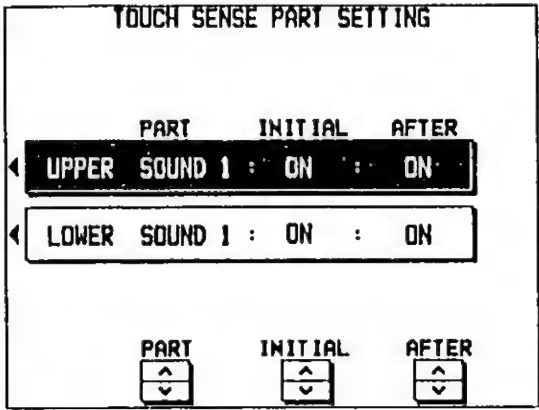


2. Use the **TOTAL TOUCH CONTROL** \wedge and \vee buttons to enable or disable the touch function.
ON: Use the touch function.
OFF: Do not use the function.
3. If ON was selected in step 2, select the keyboard (UPPER, LOWER or PEDAL).
4. Use the **SENSITIVITY** \wedge and \vee buttons to adjust the degree of touch sensitivity.
 - Select from OFF, 1 to 9. The higher the number, the greater the change in volume corresponding to how hard or softly the keyboard is played. When set to OFF, the volume is the same no matter how hard or softly the keyboard is played.
5. Repeat steps 3 and 4 for the other keyboards as desired.

■ TOUCH SENSE PART SETTING

Specify for each part whether the touch sensitivity setting is effective.

- 1. On the INITIAL TOUCH SENSITIVITY display, press the PART SETTING button to show the following display.



- 2. Select the keyboard of the part (UPPER or LOWER).
- 3. Use the PART buttons to select the part (ORGAN, SOUND 1, 2 or 3).
- 4. Use the INITIAL buttons to set the touch sensitivity to ON or OFF for the part.
 - You can use the AFTER ^ and v buttons to set the AFTER TOUCH effect to ON or OFF for the part.
 - The AFTER TOUCH applies a special effect to the sound depending on how hard the keys are pressed. You can select which effect is applied when the AFTER TOUCH is on. (Refer to page 134.)

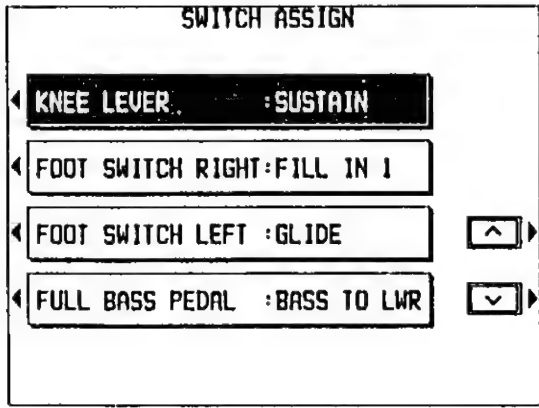
Control functions

Select the item and perform the setting procedures.

SWITCH ASSIGN

You can assign different functions to the foot switches, knee lever and full bass pedal.

- 1. On the MEM & CTRL menu display, select SWITCH ASSIGN.
 - The display looks similar to the following.



- 2. Select the switch to which you will assign a new function.

Select KNEE LEVER, FOOT SWITCH RIGHT, FOOT SWITCH LEFT or FULL BASS PEDAL.
- 3. Use the ^ and v buttons to select the desired function for the switch.

■ Functions which can be assigned to the knee lever and foot switches

- P.MEMORY 1 to 16
Turns on a specific **PANEL MEMORY** button (1 to 16).
- PANEL MEMORY INC
Turns on the next higher **PANEL MEMORY** button.
- START/STOP
Turns the **START/STOP** button on/off.
- VARIATION
Turns the **VARIATION** button on/off.
- FILL IN 1, 2
Turns the **FILL IN 1** or **2** button on/off.
- ENDING
Turns the **INTRO & ENDING** button on/off.
- SUSTAIN
Turns the sustain effect on/off.
- TREMOLO
Turns the **TREMOLO SLOW/FAST** button on/off.
- GLIDE
Turns the **GLIDE** effect on/off.
- TECH-CHORD
Turns the **TECHNI-CHORD** button on/off.
- PUNCH
Switches the **PUNCH IN/PUNCH OUT** mode.

■ Functions which can be assigned to the full bass pedal

APC

Turns **AUTO PLAY CHORD** on/off.

APC MEMORY

Turns the APC memory on/off.

BASS TO LWR

Turns the **TO LOWER** button on/off.

BASS SOLO

Only the **BASS** sound is produced when the lower keyboard is played with the **TO LOWER** button on.

■ The factory-preset switch assignment is as follows:

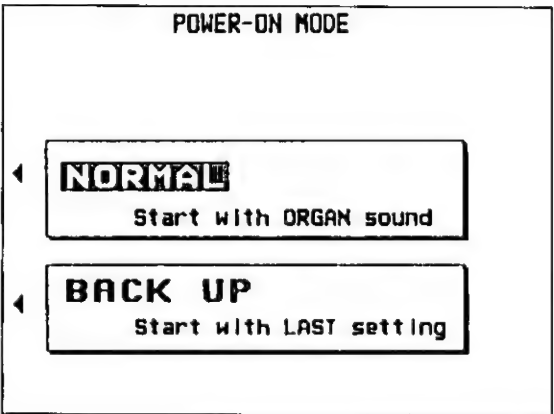
KNEE LEVER:	SUSTAIN
FOOT SWITCH RIGHT:	FILL IN 1
FOOT SWITCH LEFT:	GLIDE
FULL BASS PEDAL:	BASS TO LWR

4. Repeat steps 2 and 3 for the other switches as desired.

POWER ON MODE

Specify the sounds which are in effect for the upper and lower keyboards when the power to this instrument is turned on.

- 1. On the **MEM & CTRL** menu display, select **POWER-ON MODE**.
 - The display looks similar to the following.



- 2. Select the mode.

NORMAL: When the power to this instrument is turned on, ORGAN sounds are selected (factory-preset setting).

BACK UP: The sounds which were in effect when you last turned off this instrument are selected.

Practical applications

OUTPUT SETTING

The output settings for the **ORGAN** part, the **BASS** part and the **DRUMS** part can be adjusted.

1. On the **MEM & CTRL** menu display, select **OUTPUT SETTING**.
- The display looks similar to the following.

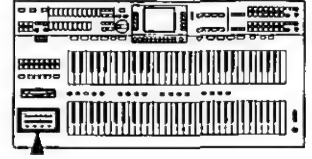
OUTPUT SETTING			
PART	EXP. PEDAL FOR SEP. OUT	SIGNAL TO	
		LINE OUT TERMINAL	INTERNAL SPEAKER
U/L ORGAN	ON	ON	ON
DRUMS	ON	ON	
BASS	ON	ON	
PART	EXP. PEDAL	LINE OUT	INT. SP.
⬆⬇⬆	⬆⬇⬆	⬆⬇⬆	⬆⬇⬆

2. Use the **PART** ^ and v buttons to select the part (U/L ORGAN, DRUMS or BASS).
3. Use the **EXP. PEDAL** ^ and v buttons to specify whether the expression pedal operation is effective for the sounds output from the **SEPARATED LINE OUT** terminals.
- ON: The sounds output from the **SEPARATED LINE OUT** terminals are affected by the expression pedal operation.
- OFF: The sounds are not affected.

4. Use the **LINE OUT** ^ and v buttons to select the output mode for the part.
- ON: The signals are output from the **LINE OUT** terminals.
- OFF: The signals are not output from the **LINE OUT** terminals.
5. Use the **INT.SP** ^ and v buttons to specify whether the sound of the part is output from this instrument's speakers.
- ON: The sound of the part is output from this instrument's speakers.
- OFF: The sound of the part is not output from this instrument's speakers.
- When the power to this instrument is turned on, this setting is automatically switched to ON for all parts.
6. Repeat steps 2 to 5 for each part as desired.
- For detailed information concerning the output terminals, refer to page 155.

Part VIII Creating sounds

Outline of the Sound Edit



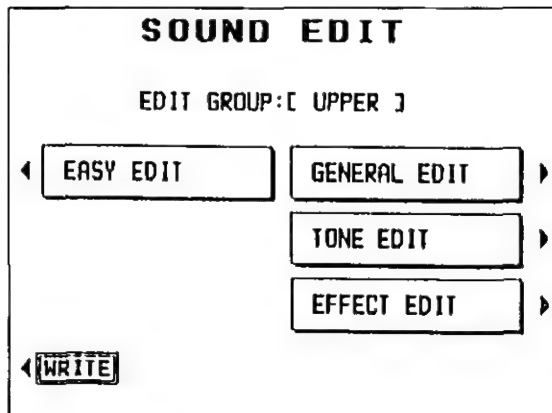
SOUND EDIT enables you to create your own new sound by altering one of the preset sounds. Your new sound can be stored in one of the sound memory locations. **SOUND EDIT** has two methods of use. You can edit in detail using functions more commonly associated with a synthesizer, or you can use **EASY EDIT** which allows you to change some basic parameters on one page.

Outline of procedure

1. Select a preset sound on which to build your new sound.
 - Select sounds from the **UPPER SOUND GROUP**, **LOWER SOUND GROUP** or **BASS PEDALS**.
 - The **ORGAN** or **CLASSICAL ORGAN** sound cannot be selected from the **BASS PEDALS** group.
2. Press the **SOUND EDIT** button to turn it on.



- The indicator for the sound button you selected in step 1 flashes.
- The display changes to the following.



EASY EDIT (page 130)

The most often used edit functions—such as brightness and attack speed—are assembled on one display for easy sound modification.

GENERAL EDIT (page 131)

Editing functions which apply to the entire sound.

OCTAVE SHIFT

Place the sound in the optimum octave range.

VIBRATO

Set the vibrato effect for the sound.

AUTOBEND & TRILL

Adjust the pitch change during the attack.

MODULATION

Adjust the amount of modulation effect.

DISTORTION

Specify the distortion attributes of the sound.

CONTROLLERS

Change the settings for effects such as glide and sustain.

AFTER TOUCH

Adjust the aftertouch settings.

TONE EDIT (page 135)

Modify the tones which make up the sound.

TONE

Set the sound and pitch of each tone.

LEVEL

Adjust the volume of each tone.

ENVELOPE

Adjust the change in volume over time for each tone.

ENVELOPE KEY FOLLOW

Adjust the change in volume over time based on pitch.

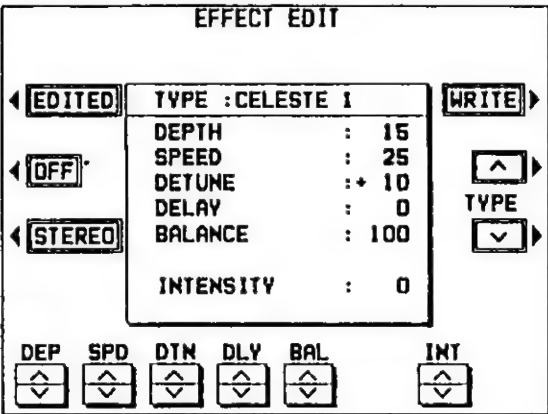
FILTER

Adjust the amount of frequency cut in specific frequency ranges.

EFFECT EDIT (page 139)

Select the type and degree of **DIGITAL EFFECT** for the sound.

3. Select the desired menu and follow the procedures on the corresponding setting display.
- <Example: EFFECT EDIT>



- Press the EDITED (or ORIGNL) button to switch between the modified sound (EDITED) and the original sound (ORIGNL). This allows you to compare the edited sound to the original sound as you are modifying it. Play the keyboard for the part you selected in step 1 to confirm the sound.
- When the current display is a setting display, you can press the EXIT button to go back to the previous display. To show other menus, use the EXIT button to return to the SOUND EDIT menu display and make another selection.
- When the TEMPO/PROGRAM indicator is lit, it indicates that the dial is available for setting the current function.

4. When the sound is just the way you like it, press the WRITE button to store your new sound. (Refer to page 140.)
- The WRITE button appears on all the editing displays and may be pressed whenever you wish to store the new sound.
 - While editing a sound, if you change to a different sound, a confirmation display appears. Press the YES button if you wish to change the sound, or press the NO button if you wish to cancel the change. (Only a sound for the part you selected in step 1 can be edited.)
 - While editing a sound, the ORCHESTRAL CONDUCTOR and part buttons (1, 2 and 3) do not work.

Easy Edit

The most commonly used edit functions are consolidated on one display, providing convenient and quick editing operation.

1. On the **SOUND EDIT** menu display, select **EASY EDIT**.
 - The display changes to the following.

EASY EDIT

◀ BRILLIANCE : 0	OCTAVE SHIFT : 0 ▶
◀ VIBRATO DEPTH : OFF	ATTACK TIME : 0 ▶
◀ VIBRATO SPEED : 0	RELEASE TIME : 0 ▶
◀ VIBRATO DELAY : 0	DIGITAL EFFECT : OFF ▶

◀ **WRITE** **VALUE**
 ▲
 ▼

2. Select a sound attribute to modify.

BRILLIANCE

Adjust the brightness of the sound.

VIBRATO DEPTH

Set vibrato depth.

VIBRATO SPEED

Set vibrato speed.

VIBRATO DELAY

Set time delay between key played and vibrato start.

OCTAVE SHIFT

Shift the octave range.

ATTACK TIME

Adjust attack time.

RELEASE TIME

Adjust time of sound fade-out after key is released.

DIGITAL EFFECT

Select type of effect.

3. Use the **VALUE** ▲ and ▼ buttons to specify the value of the attribute.

- Selecting the type of **DIGITAL EFFECT** is explained in the section on **EFFECT EDIT** (page 139).
- An effect may remain unchanged when **EASY EDIT** is used to set the value, if **GENERAL EDIT** or **TONE EDIT** was first used to set the value to its upper or lower limit. For example, when changing the **OCTAVE SHIFT** value of the "Piano" sound, the octave can be shifted only two octaves up (+2) or one octave down (-1). Even if you set the **OCTAVE SHIFT** value to -2, the octave will shift down by only one octave.

4. Repeat steps 2 and 3 to modify other sound attributes as desired.

5. Press the **WRITE** button to store your new sound.

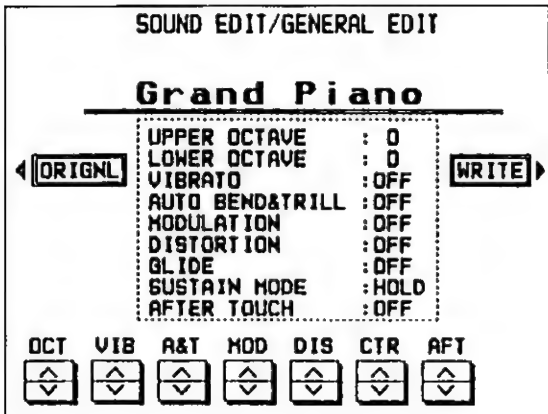
- Storing your new sound is explained on page 140.
- If a sound is stored in the **EASY EDIT** mode, and is later selected in the **EASY EDIT** mode, the displayed value of an attribute may be different from the value when it was stored. The sound itself, however, is exactly as it was stored.

General Edit

These editing functions pertain to the entire sound.

Selecting attributes

- 1. On the **SOUND EDIT** menu, select **GENERAL EDIT**.
- The display looks similar to the following. The current status of all attributes is shown.

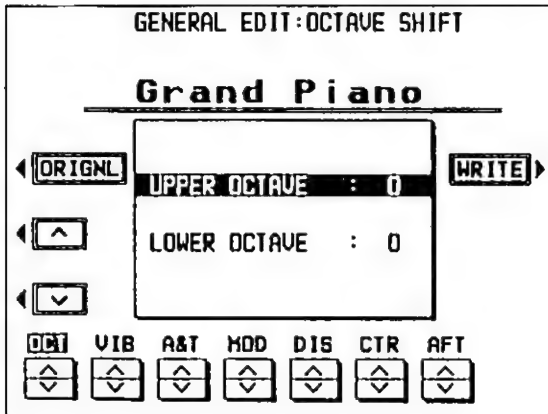


- 2. Use the buttons along the bottom of the display to select the attribute you wish to modify.
- OCT: OCTAVE SHIFT
VIB: VIBRATO
A&T: AUTOBEND & TRILL
MOD: MODULATION
DIS: DISTORTION
CTR: CONTROLLERS
AFT: AFTER TOUCH

- The display changes to the setting display for the selected attribute.
- 3. Modify each attribute (explained below).
- The buttons along the bottom of the display are present in each setting display of the **GENERAL EDIT** mode. When you have finished modifying an attribute, use the buttons to select another attribute and continue modifying the sound.

OCTAVE SHIFT

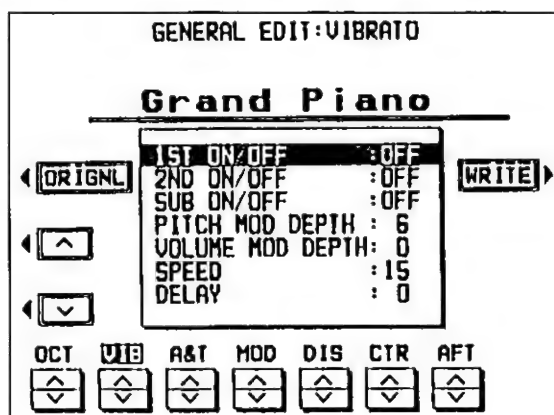
The octave of the output sound can be specified separately for the upper and lower keyboards.



- 1. Use the \wedge and \vee buttons to specify the keyboard.
- 2. Use the OCT \wedge and \vee buttons to raise or lower the pitch by octaves (-2 to 2).
- To lower the pitch one octave (or two octaves), set the value to -1 (or -2). To raise the pitch one octave (or two octaves), set the value to 1 (or 2).
- 3. Repeat steps 1 and 2 for the other keyboard if desired.

VIBRATO

Modify the vibrato attributes of the sound.



1. Use the ^ and v buttons to select the item.

1ST ON/OFF

Set the vibrato for the 1st tone to on or off. (For an explanation of tones, refer to page 135.)

2ND ON/OFF

Set the vibrato for the 2nd tone to on or off.

SUB ON/OFF

Set the vibrato for the SUB tone to on or off.

PITCH MOD DEPTH

Set the frequency change (pitch) of the vibrato (0 to 30).

VOLUME MOD DEPTH

Set the depth of the volume change (0 to 30).

SPEED

Set the vibrato speed (0 to 30).

DELAY

Set the delay time (0 to 30).

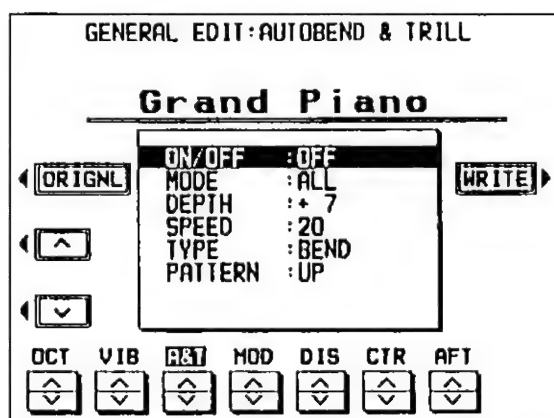
- Delay time is the time elapsed from when the keyboard key is pressed until the vibrato effect begins.

2. Use the VIB ^ and v buttons to adjust the attributes.

3. Repeat steps 1 and 2 to modify other attributes as desired.

AUTOBEND & TRILL

The AUTOBEND & TRILL causes a change in pitch during the attack period.



1. Use the ^ and v buttons to select the item.

ON/OFF

ON: This effect is on for the sound.

OFF: This effect is off for the sound.

TOUCH: This effect is applied only when the keyboard is played hard.

MODE

1ST: The effect is applied only to the 1st tone.

2ND: The effect is applied only to the 2nd tone.

ALL: The effect is applied to all the tones.

INVERSE: The effect is applied to all the tones, but is inverted for the 2nd tone.

DEPTH

Specify the amount of pitch bend (-30 to +30).

SPEED

Specify the time it takes for the altered pitch (auto bend pitch) to become the normal pitch (key pitch) (0 to 30).

TYPE

BEND: The pitch change is continuous.

TRILL: The pitch changes in steps.

PATTERN

BEND types: UP, UP-DOWN, UP-DROP, DELAY-UP

TRILL types: DOWN-UP, UP-DOWN, MELODY, 5-UP

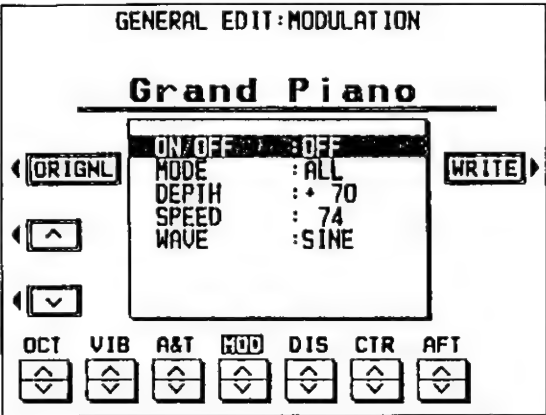
- A list of AUTOBEND & TRILL patterns (PATTERN) can be found in the separate "REFERENCE GUIDE" provided.

2. Use the A&T ^ and v buttons to adjust the attributes.

3. Repeat steps 1 and 2 to modify other attributes as desired.

MODULATION

Modify the modulation.



1. Use the ^ and v buttons to select the item.

ON/OFF

ON: The effect is applied to the sound.
OFF: The effect is not applied to the sound.

- This setting may not be effective in some cases.

MODE

1ST: The effect is applied to the 1st tone.
2ND: The effect is applied to the 2nd tone.
ALL: The effect is applied to all the tones.
INVERSE: The effect is applied to all the tones, but is inverted for the 2nd tone.

DEPTH

Set the frequency change (pitch) of the vibrato (-127 to +127).

SPEED

Set the vibrato speed (0 to 127).

WAVE

Modulate the waveform.

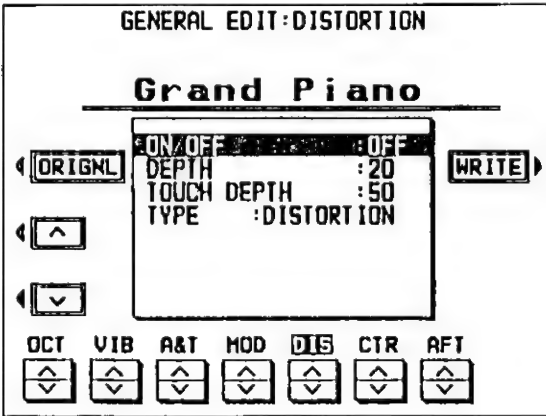
SINE: Sine wave
TRIANGLE: Triangle wave
SQUARE: Square wave
SAW: Saw tooth wave

2. Use the MOD ^ and v buttons to adjust the attributes.

3. Repeat steps 1 and 2 to modify other attributes as desired.

DISTORTION

Modify the distortion attributes of the sound.



1. Use the ^ and v buttons to select the item.

ON/OFF

ON: This effect is on for the sound.
OFF: This effect is off for the sound.

- This setting may not be effective in some cases.

DEPTH

Set the amount of change (0 to 50).

TOUCH DEPTH

Set the degree of depth change in proportion to key velocity (0 to 50).

TYPE

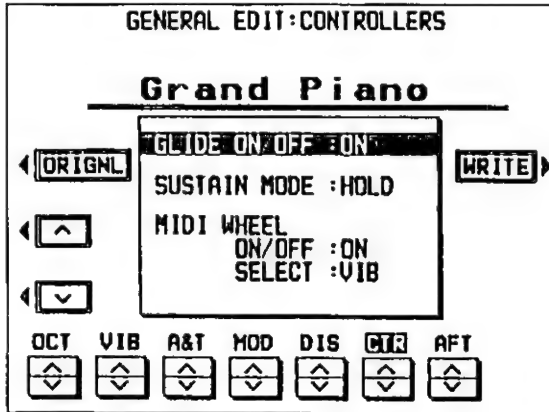
DISTORTION: The distortion is applied to the whole sound.
GROWL: The distortion is applied only to the attack period of the sound.

2. Use the DIS ^ and v buttons to adjust the attributes.

3. Repeat steps 1 and 2 to modify other attributes as desired.

CONTROLLERS

Specify whether the glide effect can be applied to the sound with a controller, the type of sustain, and whether MIDI wheel data is received.



1. Use the ^ and v buttons to select the item.

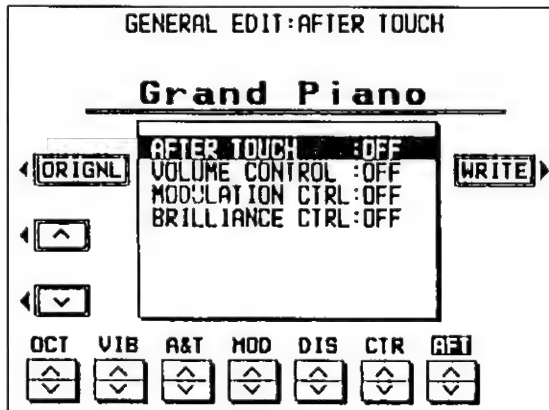
GLIDE ON/OFF

ON: The glide effect can be applied with a foot switch or other assigned controller.

OFF: The glide effect is not applied when the controller is operated.

AFTER TOUCH

Specify how the sound is affected when the keys are pressed hard.



SUSTAIN MODE

LONG: When sustain is on, the release time of the sound is extended.

HOLD: When sustain is on, the key-pressed condition is maintained.

MIDI WHEEL ON/OFF

ON: The sound is affected by modulation wheel operation data from MIDI, etc.

OFF: The sound is not affected by modulation wheel operation data from MIDI, etc.

MIDI WHEEL SELECT

MOD: Modulation effect is applied to the sound when wheel data is received through MIDI.

VIB: Vibrato effect is applied to the sound when wheel data is received through MIDI.

2. Use the CTR ^ and v buttons to adjust the settings.

3. Repeat steps 1 and 2 to modify other attributes as desired.

1. Use the ^ and v buttons to select the item.

AFTER TOUCH

ON: This EFFECT is on for the sound.

OFF: This EFFECT is off for the sound.

VOLUME CONTROL

Turn the volume control on/off.

MODULATION CTRL

Turn the modulation control on/off.

BRILLIANCE CTRL

Turn the brilliance control on/off.

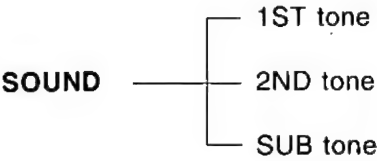
2. Use the AFT ^ and v buttons to set the attribute to on or off.

- When AFTER TOUCH is set to OFF, there is no effect, even when the keys are played hard.

3. Repeat steps 1 and 2 to modify other attributes as desired.

Tone Edit

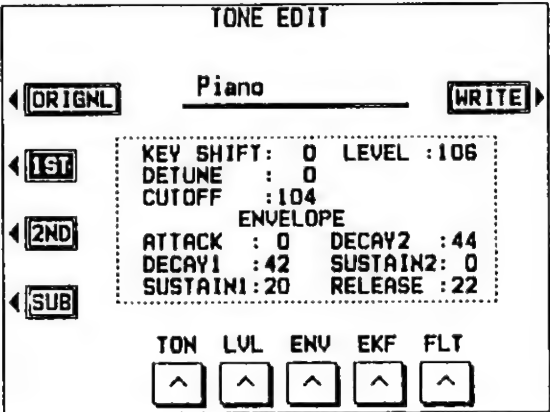
Modify the separate tones which comprise the sound. A sound may be made up of at most three tones.



- The essence of the sound is created by the combination of the 1ST tone and 2ND tone.
- Depending on the sound output status of the instrument, the SUB tone may not be generated.

Selecting attributes

1. On the **SOUND EDIT** menu, select **TONE EDIT**.
- The display looks similar to the following. The current status of the major attributes is shown.



- The attributes are modified for each tone. Use the 1ST, 2ND and SUB buttons to switch among the tones.

2. Use the buttons along the bottom of the display to select the attribute you wish to modify.

TON: TONE
LVL: LEVEL
ENV: ENVELOPE
EKF: ENVELOPE KEY FOLLOW
FLT: FILTER

- The display changes to the setting display for the selected attribute.
3. Modify each attribute (explained below).
 - When you have finished modifying an attribute, press the **EXIT** button to go back to the TONE EDIT display, select another attribute and continue modifying the sound.

Practical applications

TONE

Set the sound and pitch of each tone.

TONE EDIT

TONE

ORIGNL

WRITE

	ON	GROUP & TONE SELECT	KEY	TUNE
1ST	ON	A - Piano	0	0
2ND	OFF	A - Piano	0	+ 4
SUB	OFF	A - Piano	0	0

1. Select the tone to modify (1ST, 2ND or SUB).

2. Use the ^ and v buttons at the bottom of each column to change the setting in the column.

ON/OFF

- ON: The tone is generated.

OFF: The tone is not generated.

GROUP & TONE SELECT

- Select the kind of tone.

Tones are classified in groups named A to N.

A list of tones can be found in the separate "REFERENCE GUIDE" provided.

KEY

Specify the amount of key-shift in semitone increments (-24 to +24).

TUNE

- Fine-adjustment of the pitch (-50 to +50).

Slight differences in the TUNE values between the tones add fullness to the sound.

3. Repeat steps 1 and 2 for the other tones as desired.

LEVEL

Adjust the volume and key touch attributes of each tone.

TONE EDIT

LEVEL

ORIGNL

WRITE

	VOLUME	TOUCH	CURVE	SLOPE	KEY LIM
1ST	106	+20	+3	-10	F#5-G 8
2ND	114	+15	0	-10	F#5-G 8
SUB	114	+15	0	-10	F#5-G 8

1. Select the tone to modify (1ST, 2ND or SUB).

2. Use the ^ and v buttons at the bottom of each column to change the setting in the column.

VOLUME

Adjust the volume of the tone (0 to 127).

TOUCH

Set the degree of volume change in proportion to key velocity (-50 to +50).

- At - settings, the softer the keyboard is played, the louder the sound. At + settings, the harder the keyboard is played, the louder the sound.

CURVE

- Select the type (curve) of volume increase when the keyboard is played harder (-3 to +3).

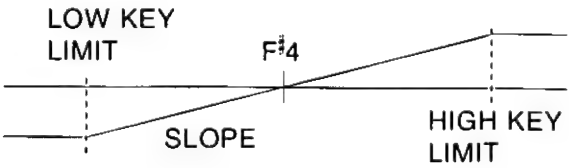
For details about CURVE types, refer to the separate "REFERENCE GUIDE" provided.

SLOPE

Specify the slope of the volume change (-50 to +50) with F#4 as the center.

KEY LIM

Specify the range of the keyboard which is affected by the volume change settings (C0 to G8).



3. Repeat steps 1 and 2 for the other tones as desired.

ENVELOPE

Specify how the volume changes over time, from the time the key is played to the time the sound dies out.

TONE EDIT

ENVELOPE

ORIGNL

WRITE

	ATK	DCY1	SUS1	DCY2	SUS2	RLS	TCH
1ST	0	42	20	26	0	22	+4
2ND	0	42	20	44	0	22	+4
SUB	0	42	25	44	0	22	+4

^

v

^

v

^

v

^

v

^

v

^

v

^

v

1. Select the tone to modify (1ST, 2ND or SUB).

2. Use the ^ and v buttons at the bottom of each column to change the setting in the column (0 to 50).

• For details about the envelope, refer to the separate "REFERENCE GUIDE" provided.

• The TCH setting changes the attack curve according to how hard the keyboard is played (-50 to +50). At a - value, the softer the keyboard is played, the faster the attack. At a + value, the harder the keyboard is played, the faster the attack.

- If the leftmost button below the display is pressed, the current envelope is illustrated on the display.

TONE EDIT

ENVELOPE

1ST

2ND

SUB

ATK

DCY1

SUS1

DCY2

SUS2

RLS

0

42

20

26

0

22

RET

URN

^

v

^

v

^

v

^

v

^

v

^

v

<

>

SCALE

<

>

- Use the ^ and v buttons at the bottom to change the corresponding setting.

• You can use the 1ST, 2ND and SUB buttons to change the TONE.

• The size of the diagram can be changed with the SCALE button.

• Press the RETURN button to go back to the previous display.

3. Repeat steps 1 and 2 for the other tones as desired.

ENVELOPE KEY FOLLOW

Specify how the envelope changes in relation to pitch.

TONE EDIT

ENVELOPE KEY FOLLOW

ORIGNL

WRITE

	SLOPE	KEY LIM
1ST	0	C 0-G 8
2ND	0	C 0-G 8
SUB	0	C 0-G 8

ATTACK

DECAY

RELEASE

^

v

^

v

^

v

1. Use the buttons to the right of the display to select the component of the envelope subject to modification (ATTACK, DECAY, RELEASE).

• The selected component is highlighted.

2. Select the tone to modify (1ST, 2ND or SUB).

3. Use the ^ and v buttons at the bottom of each column to change the setting in the column.
- SLOPE

Specify the slope of the volume change (-50 to +50) with F#4 as the center.
- KEY LIM

Specify the range of the keyboard which is affected by the volume change settings (C0 to G8).
-
4. Repeat steps 1 through 3 for the other components as desired.
- Practical applications
- 137

FILTER

Make major changes to the sound by eliminating specific frequency ranges.

TONE EDIT

FILTER

ORIGNL

WRITE

	TYPE	CUT	TCH	CURV	SLOPE	KEY LIM
1ST	0	104	44	26	0	C 0-G 8
2ND	0	112	45	26	0	C 0-G 8
SUB	0	102	34	26	+ 4	C 0-G 8

▲▼

▲▼

▲▼

▲▼

▲▼

▲▼

1. Select the tone to modify (1ST, 2ND or SUB).

2. Use the ▲ and ▼ buttons at the bottom of each column to change the setting in the column.

TYPE

- 0: Low-pass filter

Low-range signals are unchanged. High-range signals are cut according to the CUT value.
- 1 to 4: Low-pass filter + high-boost filter

A low-pass filter which emphasizes high-range signals when the CUT value is large.

• With this type of filter, the higher the number, the lower the range that is emphasized.
- 5 to 6: Low-pass filter + resonance

A low-pass filter which emphasizes the harmonic components of frequencies close to the CUT value.

• There is little emphasis when the CUT value is small.

• With this type of filter, the higher the number, the greater the amount of emphasis.

THRU: No filter effect is applied.

- CUT

Set the frequency range which is cut by the filter (0 to 127).
- TCH

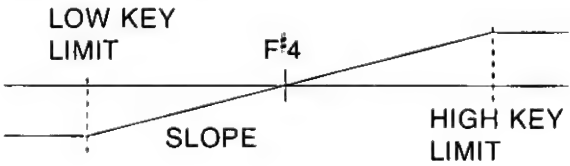
Set the filter strength in proportion to key velocity (0 to 50).
- CURV

Set the cut-off frequency in relation to key velocity (−3 to +3).

• For details about CURVE types, refer to the separate "REFERENCE GUIDE" provided.
- SLOPE

Set the slope of the filter effect (−50 to +50) with F#4 as the center.
- KEY LIM

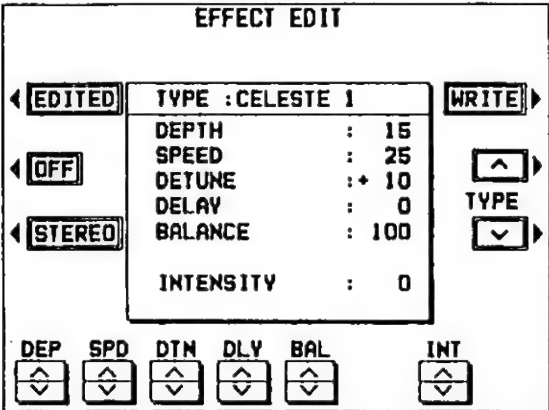
Specify the range of the keyboard which is affected by the filter (C0 to G8).



Effect Edit

Select the type of effect which is applied to your new sound when the **DIGITAL EFFECT** button is on, and modify the effect.

- On the **SOUND EDIT** menu, select **EFFECT EDIT**.
- The display looks similar to the following.



- The display for the effect type which is best-suited for the sound currently being edited is selected.

■ **ON/OFF button**

Specify whether the **DIGITAL EFFECT** button turns on or off when the sound is selected. When set to ON, the **DIGITAL EFFECT** button turns on automatically when the sound is selected. The button alternates between ON and OFF each time it is pressed.

■ **STEREO/MONO button**

Select stereo (STEREO) or monaural (MONO) output of the effect. The button alternates between STEREO and MONO each time it is pressed.

- Use the TYPE ^ and v buttons to select the type of effect.
 - Select from the following types: CELESTE 1, 2, CHORUS 1, 2, ENSEMBLE 1, 2, TREMOLO, ORGAN TREMOLO, SINGLE DELAY, REPEAT DELAY, SOLO EFFECT 1, 2.
- Use the buttons along the bottom of the display to select the attribute you wish to adjust.
 - For a detailed explanation of the parameters of each type of effect, refer to the separate "REFERENCE GUIDE" provided.
 - When the type is changed, the parameters revert to the factory-preset values.

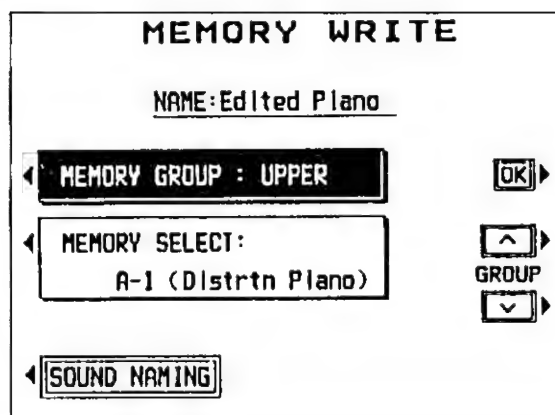
Store the new sound

The **MEMORY** buttons in the sound section are memory banks reserved for the sounds you create with the **SOUND EDIT**. You can store your original sounds in the memories, and then select them just like the factory-preset sounds.

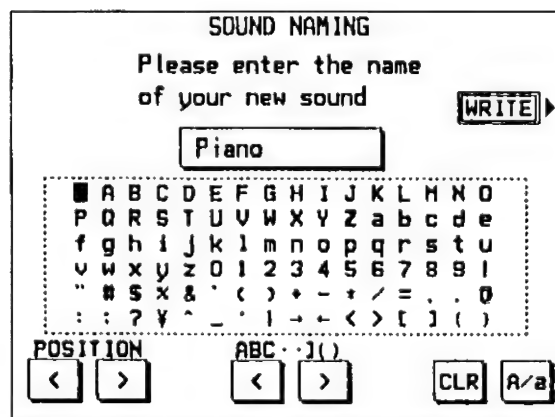
Warning: Your new sound will be erased if you exit the **SOUND EDIT** mode without first storing it in a memory.

Procedure

- When you have edited the sound to just the way you like it, press the **WRITE** button.
- The **WRITE** button appears on all the editing displays and may be pressed whenever you wish to store the new sound.
- The display changes to the **MEMORY WRITE** display.



- To assign a name to your new sound, press the **SOUND NAMING** button.
- If you do not assign a name to your sound, the name becomes the same as the original sound from which you started. In this case, skip to step 5.
- The display changes to the **SOUND NAMING** display.



- Type a new name for your sound (up to 13 characters).
- Use the **POSITION** **<** and **>** buttons to highlight the character position in the name box. Use the **ABC . J { } < >** buttons to select the character. Repeat these steps to type the whole name.
- To erase the name, press the **CLR** button.
- Use the **A/a** button to switch between upper case and lower case characters.

- When you have finished typing the name, press the **WRITE** button.
- The display returns to the **MEMORY WRITE** display.

- Select **MEMORY GROUP**. Use the **GROUP** **^** and **v** buttons to select the group in which to store the sound.

UPPER: The sound is stored in the **UPPER SOUND GROUP** memory.

LOWER: The sound is stored in the **LOWER SOUND GROUP** memory.

BASS: The sound is stored in the **BASS PEDALS** memory.

- Select **MEMORY SELECT**. Use the **SELECT** **^** and **v** buttons to select the memory number in which to store the new sound.
- If you selected **UPPER** or **LOWER** in step 5, you can select a memory number from **A1** to **A18** or from **B1** to **B18**. If you selected **BASS** in step 5, you can select a memory number from **1** to **18**.

- Press the **OK** button.
- The new sound is stored, and "WRITE COMPLETED!" is shown on the display.
- The **SOUND EDIT** mode is turned off.
- The stored sound memories can be saved on a disk for recall at a later time. (Refer to page 107.)

Select a new sound

You can select your original sound just like the factory-preset sounds.

- 1. In the sound group section in which the new sound is stored, press the **MEMORY** button to turn it on.
- For sounds stored in the **UPPER** or **LOWER SOUND GROUP** section, press the relevant **MEMORY A** or **MEMORY B** button (the bank in which you stored the sound during the MEMORY WRITE procedure).



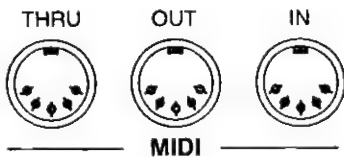
- The list of sounds in the selected bank is shown on the display.
- 2. Select the desired sound from the list on the display.

What is MIDI?

MIDI (Musical Instrument Digital Interface) is the international standard for digital communication of electronic musical instrument data. This means that any equipment which has a MIDI terminal—such as electronic musical instruments and personal computers—can easily exchange digital data with other MIDI equipment without resorting to complicated conversions or connections.

About the MIDI terminals

(On the rear panel)



IN: The terminal by which this instrument receives data from other equipment.

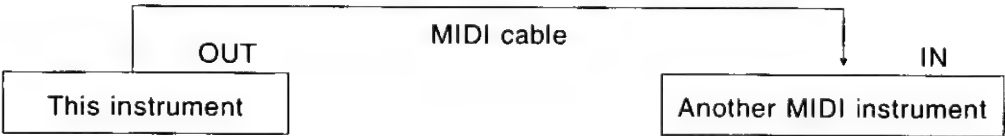
OUT: The terminal that transmits data from this instrument to other equipment.

THRU: The terminal that transfers data from this instrument to other equipment.

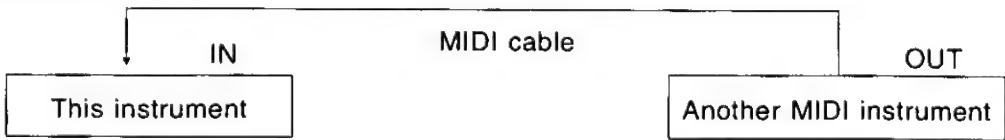
- For these connections, use a commercially available MIDI cable.

Connection examples

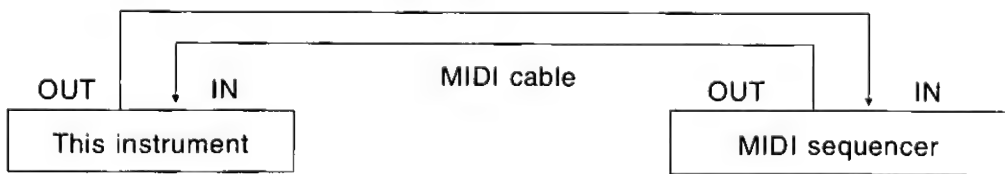
- To generate sound from a connected instrument by playing this instrument



- To generate sound from this instrument by operating a connected instrument



- To connect with a MIDI sequencer or a personal computer



MIDI channels

Many different kinds of performance data are sent using just one MIDI cable. This is possible because MIDI signals are sent and received through 16 different "basic channels" (numbered 1 to 16). In order for the exchange of data to take place, the channels on the transmission side must match the channels on the receiving side. This characteristic also makes it possible to link multiple sound generators and to control each by matching specific channels.

The following kinds of data can be transmitted/received.

■ Note data

This is the most basic kind of MIDI data which is exchanged, and is used to specify which keys are played and how hard they are played.

Note number: Number specifying which key is played.

Note on: Specifies that a key is played.

Note off: Specifies that a key is released.

Velocity: Specifies how hard a key is struck.

- MIDI notes are assigned numbers from 0 to 127, with middle C (C3) as 60. Note pitches are in semitone increments, with the higher numbers assigned to the higher pitches.

■ Program change

This is sound change data. When a different sound is selected on the transmitting instrument, the sound on the receiving instrument also changes.

■ Control change

These are volume, sustain, effect, etc. data used to enhance performance expression. Each function is distinguished by its control number, and the function which can be changed by the control differs depending on the instrument.

GENERAL MIDI

GENERAL MIDI (GM) is the standard which enables MIDI data exchange between different models or equipment of different manufacture. Program change numbers and their corresponding sounds, percussion instrument sounds, note numbers, etc. are data-compatible between equipment using this standard.

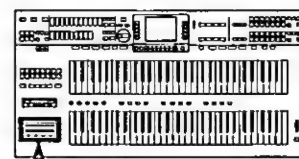
Song data created on the equipment of one manufacturer can be played back on the equipment of a different manufacturer, as long as both conform to the GENERAL MIDI standard.

This instrument conforms to this standard and can be used as a GENERAL MIDI sound generator.

Equipment which conforms to GENERAL MIDI standards is indicated by the following logo.



Outline of MIDI functions



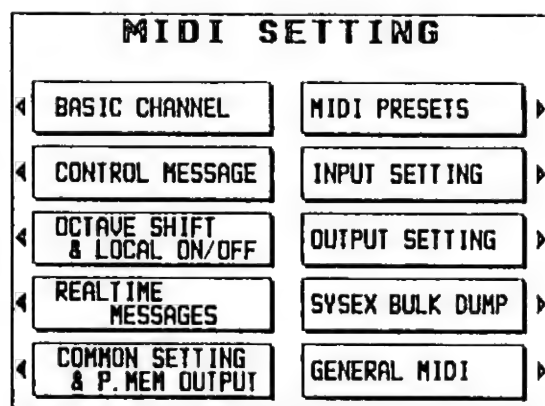
Select the various settings which are used for MIDI operation of the instrument.

Outline of procedure

1. Press the **MIDI** button to turn it on.



- The display changes to the following menu.



BASIC CHANNEL (page 145)

Assign a MIDI channel to each part.

CONTROL MESSAGE (page 146)

Enable or disable the exchange of various control data.

OCTAVE SHIFT & LOCAL ON/OFF (page 146)

Make the OCTAVE and LOCAL CONTROL settings for each part.

REALTIME MESSAGES (page 147)

Make the REALTIME COMMAND and CLOCK settings.

COMMON SETTING & P. MEM OUTPUT (page 148)

Functions which are common to all parts.

SETTING 1

PROG. CHANGE TO P. MEM
NOTE ONLY

SETTING 2

AUTO PLAY CHORD CONTROL

SETTING 3

TRANPOSE
PROGRAM CHANGE MODE
DRUMS TYPE
SONG SELECT
SETUP LOAD

PANEL MEMORY LOCAL CONTROL

Settings related to LOCAL CONTROL by **PANEL MEMORY** operation.

PANEL MEMORY PROGRAM CHANGE

Settings related to PROGRAM CHANGE BY **PANEL MEMORY** operation.

MIDI PRESETS (page 151)

Establish the optimum settings depending on how this instrument is connected to other equipment.

INPUT SETTING (page 152)

Various settings related to data reception.

OUTPUT SETTING (page 152)

Various settings related to data transmission.

SYSEX BULK DUMP (page 153)

Settings related to SYSTEM EXCLUSIVE data exchange.

GENERAL MIDI (page 153)

Specify whether this instrument is compatible with GENERAL MIDI standard instruments.

2. Select the menu and perform the setting procedures.

- During the setting display, you can press the **EXIT** button to go back to the previous display. To show other menus, use the **EXIT** button to return to the MIDI SETTING menu display, and make another selection.
- When the **TEMPO/PROGRAM** indicator is lit, it indicates that the dial is available for setting the current function.

3. When you have finished adjusting the settings, press the **MIDI** button to turn it off.

MIDI Implementation Chart

Although MIDI makes it easy for you to connect various instruments for an enhanced performance, it does not necessarily follow that all MIDI data can be exchanged. For example, if the transmitting instrument handles data that the receiving instrument can not, then such data cannot be successfully sent. For data to be exchanged, both instruments must be able to handle it. You can find out what kind of data can be sent or received by each instrument by referring to the MIDI Implementation Chart for each instrument. The MIDI Implementation Chart for this instrument can be found in the separate "REFERENCE GUIDE" provided.

MIDI data format

A detailed explanation of how MIDI data of this instrument is organized can be found in the separate "REFERENCE GUIDE" provided.

Setting the functions

Select the relevant menu and perform the procedure to set the functions.

BASIC CHANNEL

Channel numbers have already been assigned to parts (factory-presets), but you can reassign channel numbers to parts as desired.

MANUAL

OTHER

APC

PART	CHANNEL
U.SND 1	1
U.SND 2	2
U.SND 3	3
L.SND 1	6
L.SND 2	7
L.SND 3	4
BASS	OFF
U. ORGAN	OFF
L. ORGAN	OFF
KB. PERC.	16

CHANNEL

PART

1. Use the buttons to the left of the display to select the group of parts.
MANUAL: U.SND 1 to 3, L.SND 1 to 3, BASS, U.ORGAN, L.ORGAN, KB. PERC.
OTHER: PART 8 to 15, CONTROL
APC: ACCOMP 1 to 3, BASS, DRUMS, CHORD

2. Use the PART ^ and v buttons to select the part.

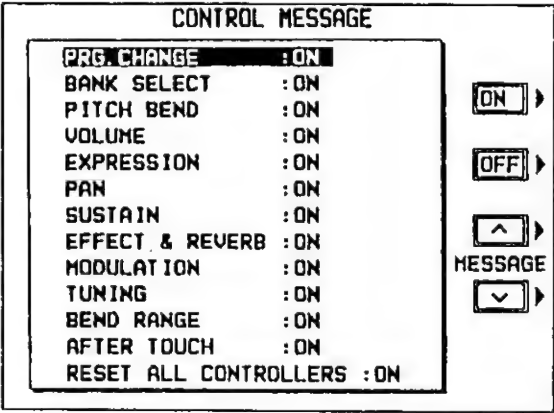
3. Use the CHANNEL ^ and v buttons to select a basic channel for the part (OFF, 1 to 16).
 - A part which has been set to OFF cannot be used to transmit or receive MIDI data.

4. Repeat steps 1 to 3 for each part as desired.

Practical applications

CONTROL MESSAGE

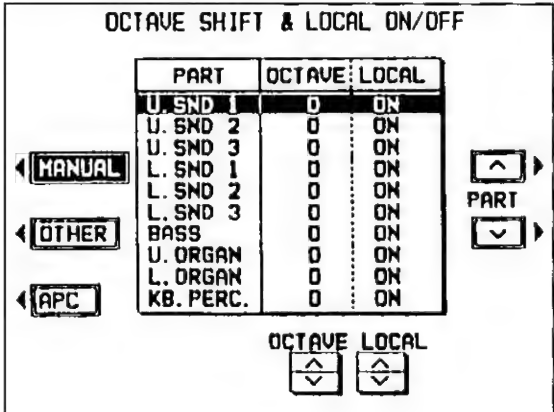
Enable or disable the exchange of various control data.



1. Use the MESSAGE ^ and v buttons to select the control message.
2. Use the ON and OFF buttons to specify on or off for the control message.
ON: Data for the control operation is exchanged.
OFF: Data for the control operation is not exchanged.
 - The BANK SELECT setting is effective only when PRG. CHANGE is set to ON.
 - The EFFECT & REVERB setting controls the **DIGITAL EFFECT**, **DSP EFFECT**, **TREMOLO** and **DIGITAL REVERB** on/off.
 - The TUNING setting is the on/off setting for the TUNING and KEY SHIFT settings.
3. Repeat steps 1 and 2 for each control as desired.

OCTAVE SHIFT & LOCAL ON/OFF

Set the octave shift value for key notes transmitted from this instrument (OCTAVE), and specify whether this instrument's sound generator is enabled when MIDI data is transmitted (LOCAL CONTROL).



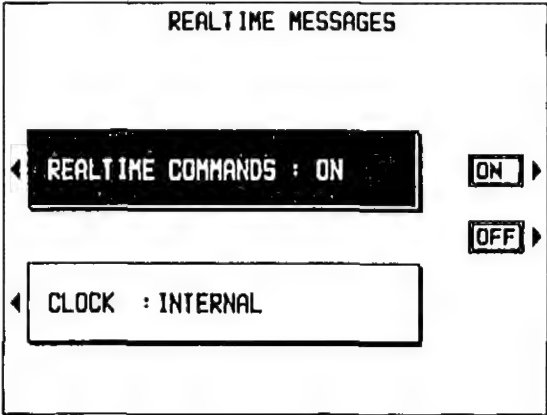
1. Use the buttons to the left of the display to select the group of parts.
MANUAL: U.SND 1 to 3, L.SND 1 to 3, BASS, U.ORGAN, L.ORGAN, KB. PERC.
OTHER: PART 8 to 15
APC: ACCOMP 1 to 3, BASS, DRUMS, CHORD

2. Use the PART ^ and v buttons to select the part.
3. Use the ^ and v buttons to change the setting for the corresponding function.

- OCTAVE (-3 to 3)
- Set the octave shift value. Octave shift is set for transmitted data only; however the transmitted and received octave shifts are linked. For example, if the transmitted octave shift is set to 1, the received octave shift is automatically set to -1.
- LOCAL (ON/OFF)
- When set to ON, the performance from this instrument is transmitted as MIDI data and also sounds from this instrument. When set to OFF, the performance from this instrument is transmitted as MIDI data but does not sound from this instrument.
4. Repeat steps 1 to 3 for each part as desired.

REALTIME MESSAGE

Enable or disable the exchange of **START/STOP** data (REALTIME COMMANDS), and select the **CLOCK** mode.



1. Use the buttons to the left of the display to select a function (REALTIME COMMANDS or CLOCK).
2. Use the ON and OFF buttons, or the \wedge and \vee buttons, to change the setting.

REALTIME COMMANDS

- ON: Rhythm and **SEQUENCER** start/stop, continue, and song position pointer data can be transmitted/received.
- OFF: This data cannot be transmitted/received.

CLOCK

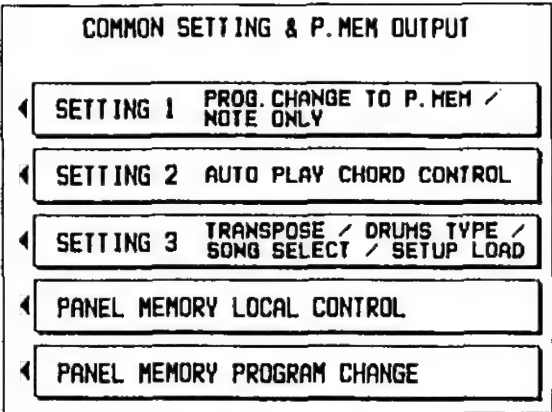
- INTERNAL: This instrument's internal clock is used to control the performance. The clock of the connected equipment is disabled.
- MIDI: The clock of the connected equipment is used to control the performance. This instrument's clock is disabled.

- When MIDI is selected, the tempo is displayed as "—" and the rhythm and **SEQUENCER** are disabled until the **CLOCK** signal is received from the connected instrument.
3. Repeat steps 1 and 2 as desired.

Practical applications

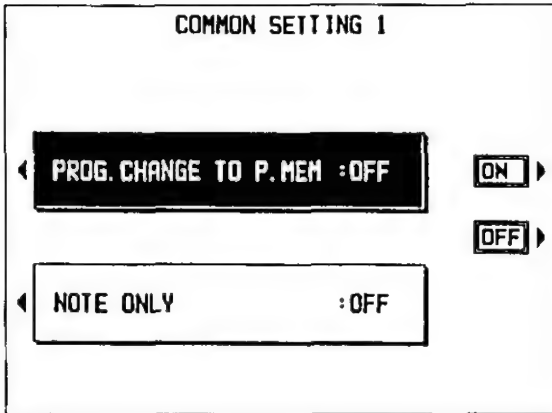
COMMON SETTING & PANEL MEMORY OUTPUT

Set the functions which are common to all parts.



■ COMMON SETTING 1

1. On the COMMON SETTING menu display, select SETTING 1.
- The display changes to the following.



2. Use the buttons to the left of the display to select the function.

PROG. CHG TO P. MEM

Enable or disable the exchange of program change numbers for the U.SOUND1 part by operation of the **PANEL MEMORY** buttons. The **PANEL MEMORY 1** to **16** buttons correspond to program change numbers 0 to 15.

NOTE ONLY

Of the performance data, specify whether or not only note data is exchanged.

3. Use the ON and OFF buttons to select on or off.

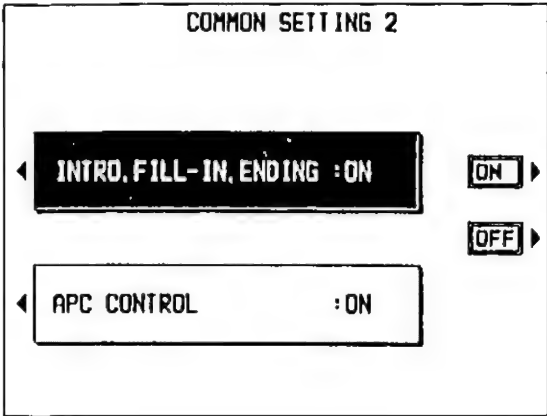
ON: Data exchange is enabled.

OFF: Data exchange is disabled.

4. Repeat steps 2 and 3 for the other settings as desired.

■ COMMON SETTING 2

1. On the COMMON SETTING menu display, select SETTING 2.
- The display changes to the following.



2. Use the buttons the left of the display to select the function.

INTRO, FILL IN, ENDING

Enable or disable the exchange of intro, fill-in and ending data.

- Data is exchanged on the channel for the **DRUMS** part.

APC CONTROL

Enable the exchange of data for the on/off status of the **AUTO PLAY CHORD**'s ONE FINGER, FINGERED and PIANIST modes.

- Data is exchanged on the channel for the **L.SOUND 1** part.

3. Use the ON and OFF buttons to select on or off.

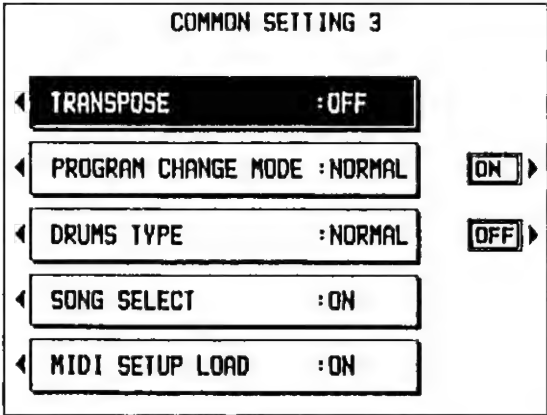
ON: Data exchange is enabled.

OFF: Data exchange is disabled.

4. Repeat steps 2 and 3 for the other setting as desired.

■ COMMON SETTING 3

1. On the COMMON SETTING menu display, select SETTING 3.
- The display changes to the following.



2. Use the buttons the left of the display to select the function.

TRANPOSE

- ON: The note number of the transposed note is transmitted/received.
- OFF: The note number of the played key is transmitted/received.

PROGRAM CHANGE MODE

NORMAL: The program change numbers follow the order of the sound buttons as they are lined up on the panel.

TECH: Program change numbers are standardized among all Technics models which are set to this mode. The program change number assigned to a given sound on one model is assigned to the same sound on all models which are set to the same mode.

GM: Program change numbers follow the GM standard.

- The program change numbers for each mode can be found in the separate "REFERENCE GUIDE" provided.

DRUMS TYPE

NORMAL: Keyboard percussion instrument sounds correspond to this instrument's key note numbers.

TECH: Keyboard percussion instrument sounds correspond to the same key note numbers for connected Technics models set to this type. (The closest instrument sound is automatically selected.)

GM: Keyboard percussion instrument sounds follow the GM standard.

SONG SELECT

- ON: Song number data can be exchanged.
- OFF: Song number data cannot be exchanged.

MIDI SETUP LOAD

- ON: When disk data is loaded, the MIDI settings stored on the disk are automatically recalled.
- OFF: MIDI settings stored on the disk are not recalled.

■ PANEL MEMORY LOCAL CONTROL

During a performance, you can change the sound generator setting and MIDI mode setting by changing the **PANEL MEMORY** selection.

1. On the COMMON SETTING menu display, select **PANEL MEMORY LOCAL CONTROL**.
 - The display changes to the following.

PANEL MEMORY LOCAL CONTROL

PANEL MEMORY : 1
 : OFF

	PART	LOCAL	MIDI
◀ UPPER	: SOUND 1	: ON	: ON
◀ LOWER	: SOUND 1	: ON	: ON
◀ BASS	: -	: ON	: ON

P.M.
 ON/OFF
 ▲▼

PART
 ▲▼

LOCAL
 ▲▼

MIDI
 ▲▼

2. Use the P.M. ▲ and ▼ buttons to specify the **PANEL MEMORY** number.
3. Use the ON/OFF ▲ and ▼ buttons to turn the specified **PANEL MEMORY** local control on or off.
 - ON: The **PANEL MEMORY** settings of this instrument are effective.
 - OFF: The **PANEL MEMORY** settings of this instrument are not effective.

3. Use the ▲ and ▼ buttons, or the ON and OFF buttons, to change the settings.
4. Repeat steps 2 and 3 for the other functions as desired.

4. Use the PART ▲ and ▼ buttons to select a part (SOUND 1 to 3).

5. Use the LOCAL or MIDI ▲ and ▼ buttons to select the mode.

LOCAL

- ON: The performance from this instrument sounds from this instrument.
- OFF: The performance from this instrument does not sound from this instrument.

MIDI

- ON: Performance data and control data are transmitted.
- OFF: Performance data and control data are not transmitted.

6. Repeat steps 4 and 5 for each part as desired.
7. Repeat steps 2 through 6 for each **PANEL MEMORY** number as desired.

■ PANEL MEMORY PROGRAM CHANGE

Specify how **PANEL MEMORY** operation affects transmission of program change data for the **SOUND 1** to **3**, **ORGAN** and **BASS** parts.

1. On the **COMMON SETTING** menu display, select **PANEL MEMORY PROGRAM CHANGE**.
- The display changes to the following.

PANEL MEMORY PROGRAM CHANGE

PANEL MEMORY : 1
: OFF

PART P. CHANGE BANK SEL.

UPPER : SOUND 1 : OFF : 0

LOWER : SOUND 1 : OFF : 0

BASS : - : OFF : 0

P.M. ON/OFF PART P.CNG BANK

2. Use the **P.M.** \wedge and \vee buttons to specify a **PANEL MEMORY** number.

3. Use the **ON/OFF** \wedge and \vee buttons to turn the specified **PANEL MEMORY** program change output to on or off.

ON: The **PANEL MEMORY** settings of this instrument are effective.

OFF: The **PANEL MEMORY** settings of this instrument are not effective.

4. Use the **PART** \wedge and \vee buttons to select a part (**SOUND 1** to **3**).
5. Use the **P.CNG** \wedge and \vee buttons to specify a **PROGRAM CHANGE** number (0 to 127, **OFF**), and the **BANK** \wedge and \vee buttons to specify a **BANK SELECT** number (0 to 255).
6. Repeat steps 4 and 5 for each part as desired.
7. Repeat steps 2 through 6 for each **PANEL MEMORY** number as desired.

MIDI PRESETS

Establish the optimum settings depending on how this instrument is connected to other equipment, and on whether this instrument is used as the master or the slave.

MIDI PRESETS

MASTER SLAVE

Keyboard type1
Keyboard type2
PR Piano type1
PR Piano type2
PX Piano
External SEQ.

Keyboard type1
Keyboard type2
PR Piano type1
PR Piano type2
PX Piano
External SEQ.

WITHOUT APC WITH APC

OK

1. Use the \wedge and \vee buttons to select the connection setup.
- The **MASTER** is the instrument used to transmit data, and the **SLAVE** is the instrument used to receive the data.
- Use the buttons at the bottom of the display to select **WITHOUT APC** or **WITH APC**.

WITHOUT APC

AUTO PLAY CHORD is not used.

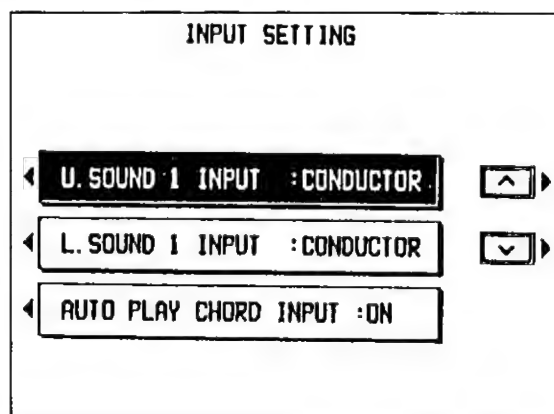
WITH APC

Performance includes **AUTO PLAY CHORD** performance.

2. Press the **OK** button.
- When the settings have been successfully stored, "COMPLETED!" appears on the display.
- Detailed information about the **MIDI PRESETS** can be found in the separate "REFERENCE GUIDE" provided.

INPUT SETTING

Make the settings which determine how various performance data is treated during data reception.



1. Use the buttons to the left of the display to select the item.

U.SOUND 1 INPUT, or L.SOUND 1 INPUT CONDUCTOR: When data for the U.SOUND 1, or L.SOUND 1, part is received, the **CONDUCTOR** of this instrument determines which part it is used for.

DIRECT: When data for the U.SOUND 1, or L.SOUND 1, part is received, it is treated only as **UPPER SOUND 1**, or **LOWER SOUND 1**, data.

AUTO PLAY CHORD INPUT

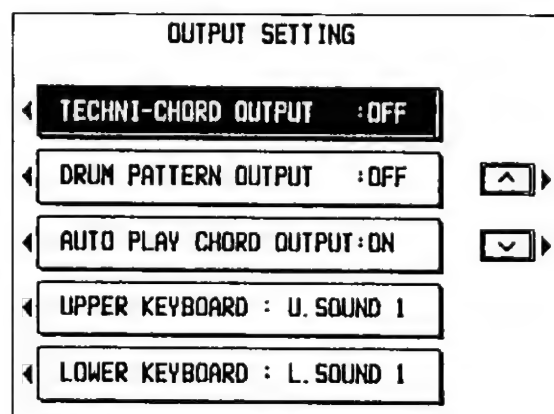
ON: Input data for the **ACCOMP 1, 2, 3, BASS, DRUMS** and **CHORD** parts is received.

OFF: Data for the above parts is not received.

2. Use the ^ and v buttons, or the ON and OFF buttons, to change the setting.
3. Repeat steps 1 and 2 for each item as desired.

OUTPUT SETTING

Make the settings which determine how various performance data is treated during data transmission.



1. Use the buttons to the left of the display to select the item.

TECHNI-CHORD OUTPUT

ON: Keyboard notes generated by the **TECHNI-CHORD** function are also transmitted.

OFF: Only key note data of the pressed keys is transmitted.

DRUM PATTERN OUTPUT

ON: Data from the **DRUMS** part is transmitted.

OFF: Data from the **DRUMS** part is not transmitted.

AUTO PLAY CHORD OUTPUT

ON: The data for the **ACCOMP 1, 2, 3, BASS** and **CHORD** parts is transmitted.

OFF: The data for the above parts is not transmitted.

UPPER KEYBOARD/LOWER KEYBOARD

CONDUCTOR: Upper and lower keyboard note data is transmitted on the basic channels corresponding to the selected **ORCHESTRAL CONDUCTOR** parts.

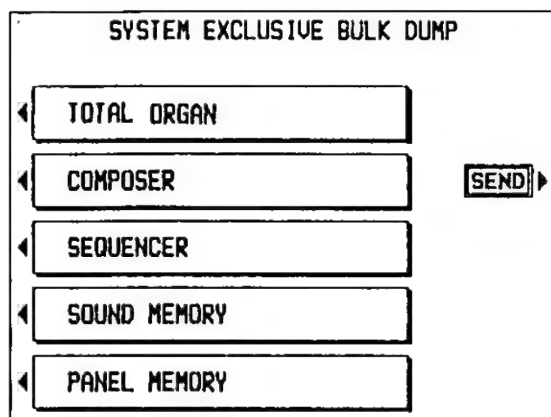
U/L.SOUND 1: Upper and lower keyboard note data is transmitted on the basic channel to which the **SOUND 1** part is assigned.

2. Use the ^ and v buttons, or the ON and OFF buttons, to change the setting.
3. Repeat steps 1 and 2 for each item as desired.

SYSTEM EXCLUSIVE BULK DUMP

This instrument's internal data such as panel settings, performance data, etc. can be transmitted to an received from another **SX-F100** Organ or other MIDI equipment as SYSTEM EXCLUSIVE data.

- Sound is not generated from this instrument during this procedure.



■ Transmitting

1. Follow the procedure necessary to prepare the receiving instrument for data reception.
2. Use the buttons to the left of the display to select the type of data to transmit (TOTAL ORGAN, COMPOSER, SEQUENCER, SOUND MEMORY or PANEL MEMORY).
3. Press the SEND button.
 - During transmission, the transmitting status is shown on the display.

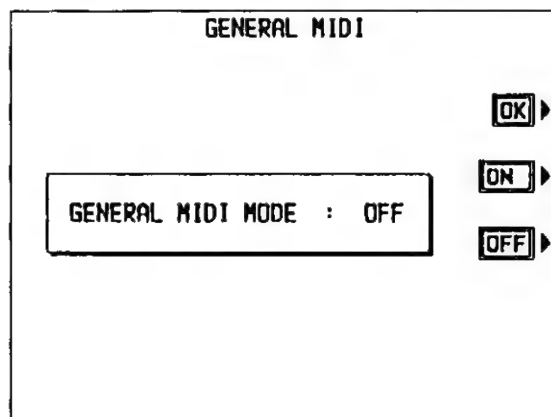
■ Receiving

After accessing this display on this instrument, follow the transmission procedure on the transmission side.

- During reception, the receiving status is shown on the display.

GENERAL MIDI

Make the GENERAL MIDI settings. (A brief explanation of GENERAL MIDI is on page 143.)



1. Use the ON and OFF buttons to specify whether or not this instrument should be compatible with GENERAL MIDI standard instruments.
 - This setting is automatically set to ON if data is loaded from a disk for which the GM mode was set to on, or from a disk for which the GM mode has not been specified.
 - If ON is selected, the status of this instrument changes to the GENERAL MIDI status, and the sounds and operations which can be selected are limited. In addition, the arrangement of percussion sounds on the keyboard changes. (Refer to the separate "REFERENCE GUIDE" provided.)
 - If GENERAL MIDI on/off data is received from connected MIDI equipment, the received data has priority.

2. Press the OK button.

- The confirmation display appears. Press the YES button to execute the function, or press the NO button to cancel the function.

Warning

- The **SEQUENCER** memory is cleared when the GENERAL MIDI mode is changed.
- If the power is turned off while the GENERAL MIDI mode is ON, the setting is automatically set to OFF and the **SEQUENCER** memory is cleared.

Initialize

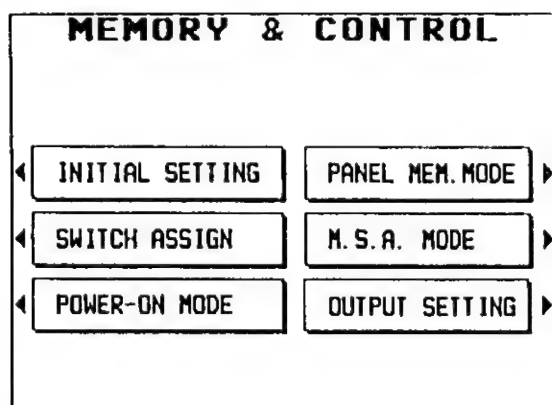
This instrument has many settable functions and storable memories. However, you can return the settings and memories to the factory-preset status.

INITIAL

1. Press the **MEM & CTRL** button to turn it on.

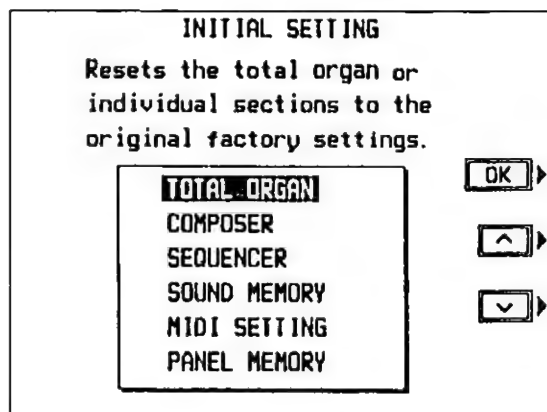


- The display changes to the following.



2. Select **INITIAL**.

 - The display changes to the following.



3. Use the \wedge and \vee buttons to select the desired type of initialization (TOTAL SETTING, COMPOSER, SEQUENCER, SOUND MEMORY, MIDI SETTING, PANEL MEMORY).
4. Press the **OK** button.
 - The display changes to the confirmation display. Press the **YES** button if you wish to execute the initialization. Press the **NO** button if you wish to cancel the procedure.
 - When you press the **YES** button, initialization begins. When initialization is completed, the instrument returns to the normal performance mode.
- You can also reset all the instrument settings with the following procedure: Turn off the **POWER** button once. Then, while pressing the three lower left buttons in the **RHYTHM GROUP** section at the same time, turn the **POWER** button on again.

■ About the backup memory

The panel settings, **PANEL MEMORY** and MIDI settings are maintained in the backup memory for about one week after the power to this instrument is turned off. Other stored memories, such as the **SEQUENCER** and **COMPOSER**, are maintained for about 80 minutes. If you wish to keep the memory contents, before you turn off the instrument, use the **SAVE** procedure to store the desired data on a disk for recall at a later time.

- The backup memory does not function until the power has been on for about 10 minutes.
- When you quit the operating mode, a warning display may appear to remind you to save the data. If this occurs, after checking the reminder, press the **OK** button.

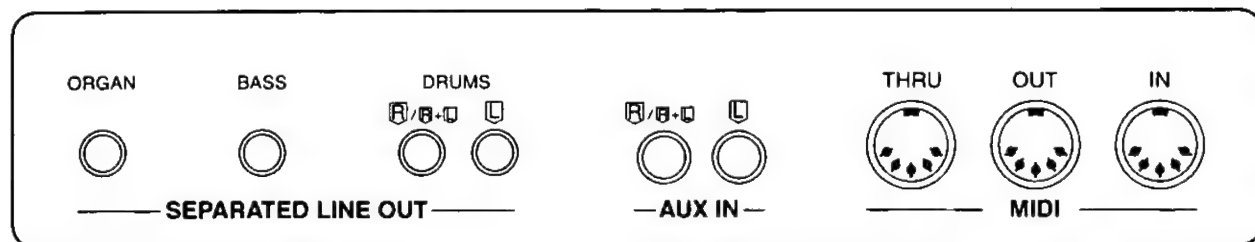
■ Power-on settings

When the power to this instrument is turned on, **ORGAN** settings are automatically selected.

- If you wish to retain the settings which were in effect when you last turned off this instrument, set the **POWER-ON MODE** to **BACK UP**. (Refer to page 126.)

Connections

(On the rear panel)



AUX IN (input level 500 mV, 33 kΩ)

Other instruments such as a keyboard can be connected to the organ so that the signal is output from the organ. To receive monaural sound, connect instruments to the **R/R+L** terminal. (In this case, do not use the **L** terminal.)

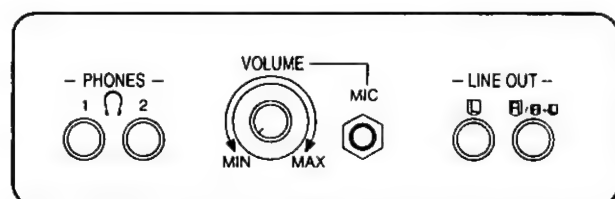
MIDI (Refer to page 142.)

SEPARATED LINE OUT

The signals of the **BASS**, **DRUMS** and **ORGAN** parts can be output independently from these terminals.

- The **DRUMS** output signal can be stereo. For monaural output, connect the speaker to the **R/R+L** terminal. (In this case, do not use the **L** terminal.)
- For more information on the use of these terminals, refer to page 127.

(Beneath the right side of the lower keyboard)



PHONES

For silent practice, headphones may be used. When plugged in, this instrument's speaker system is automatically switched off, and the sound is heard only through the headphones.

MIC (input level 7.5 mV, 10 kΩ)

A microphone can be connected to this terminal for output from the organ's speakers. You can, for example, sing while you play the organ, and both sounds are heard from the organ's speakers. Control the output level with the **VOLUME** control.

LINE OUT (output level 1.0 Vrms, 600 Ω)

By connecting an external high-power amplifier, the sound can be reproduced at a high volume. To output monaural sound, connect the external equipment to the **R/R+L** terminal. (Do not connect the **L** terminal.)

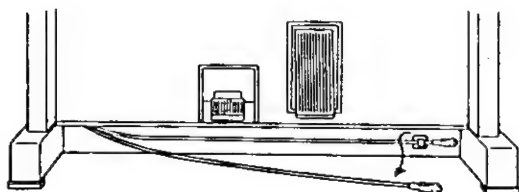
- You can specify whether or not the **ORGAN**, **BASS** and **DRUMS** part sounds are output from these terminals. (Refer to page 127.)

Assembly

Please follow the procedure below to assemble the pedal keyboard.

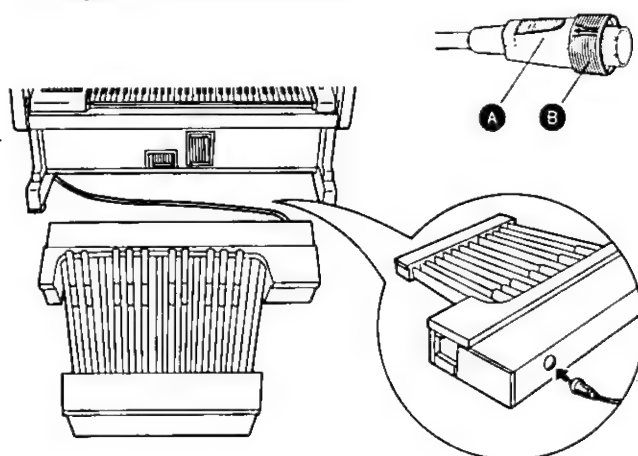
- To prevent the pedal keyboard, reverse the procedure.

- 1.** Detach the cord from the clamp on the organ base.

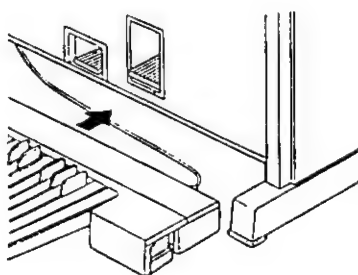


- 2.** Connect the connector to the pedal keyboard unit as shown in the figure.

- When inserting the connector, hold portion **A** of the plug and push it in firmly until you hear a click.
- When removing the connector, hold portion **B** of the plug and pull.



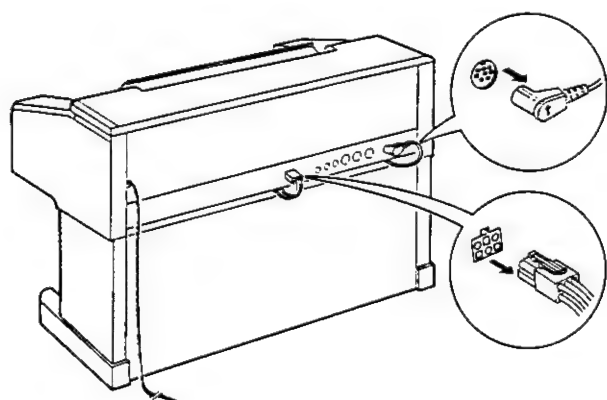
- 3.** Gently push the pedal keyboard unit in the direction of the arrow, taking care not to scratch the organ base.



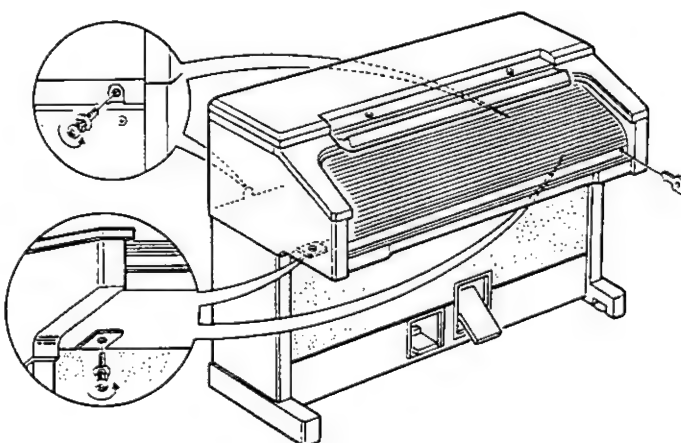
Disassembly

If the organ is to be moved, transport will be facilitated by first disassembling the organ following the procedure below.

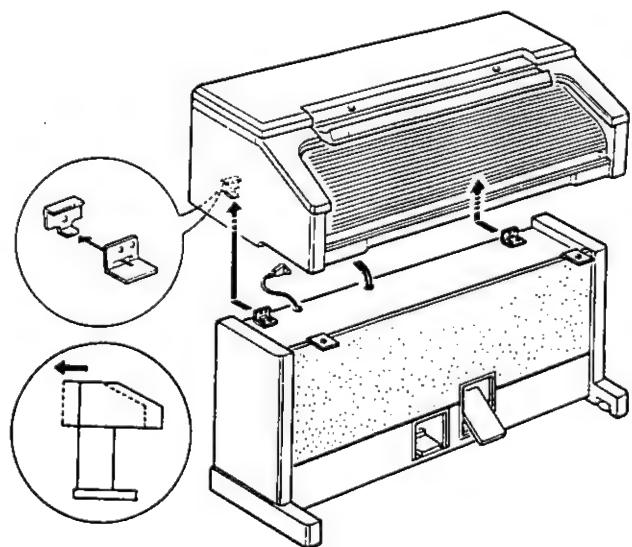
1. Disconnect the speaker cord and pedal cord.



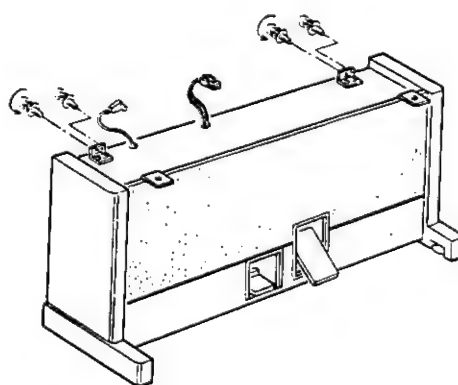
2. Remove the four bolts which secure the upper organ unit to the lower organ unit. Lock the keyboard cover.



3. Gently slide the upper organ unit slightly to the rear, and remove the upper organ unit from the lower organ unit.



4. As shown in the figure, screw the four bolts removed in step 2 into the metal joints of the lower organ unit.



Symptoms which appear to be signs of trouble

The following changes in performance may occur in the Technics Organ but do not indicate trouble.

Phenomenon		Remedy
Sounds and effects	The buttons, keys, etc. malfunction.	<ul style="list-style-type: none">• Turn off the POWER button once, then turn it on again. If this procedure is not successful, turn off the POWER button once. Then, while pressing the three lower left buttons in the RHYTHM GROUP section (BALLAD POP, TRAD DANCE and MODERN DANCE) at the same time, turn the POWER button on again. (Note that, in this case, all programmable settings, functions and memories return to their factory-preset status.)
	No sound is produced when the keys are pressed.	<ul style="list-style-type: none">• The MAIN VOLUME is at the minimum setting. Adjust the volume with the MAIN VOLUME control.• The volumes for the selected parts are set to the minimum levels. Use the balance buttons to set the volumes of the relevant parts to appropriate levels. (Refer to page 29.)• The local control for a part performed on the keyboard is set to OFF. Set the local control to ON. (Refer to page 146.)
	The volume is very low when the keyboard is played.	<ul style="list-style-type: none">• The volume setting in the SEQUENCER contents is very low. Follow the INITIAL procedure to reset the settings. (Refer to page 154.)
	Some sounds cannot be selected.	<ul style="list-style-type: none">• When the GENERAL MIDI mode is set to ON, the sounds which can be selected and operations which can be executed are limited. Set the GENERAL MIDI mode to OFF to return the instrument to its normal operation. (Refer to page 153.)
	Only percussive instrument sounds are produced when the lower keyboard is played.	<ul style="list-style-type: none">• The KEYBOARD PERCUSSION button is on.
	The knee lever, foot switch(es) and full bass pedal do not operate properly. For example, the knee lever does not turn the SUSTAIN function on and off.	<ul style="list-style-type: none">• Any functional on and off operation other than the factory presets are storable in these switches. For example, the knee lever can turn the TECHNI-CHORD on and off. Store your favorite functions to turn them on and off. (Refer to page 125.)
	The sound of the lower keyboard does not stop.	<ul style="list-style-type: none">• The MEMORY button of the AUTO PLAY CHORD is on. Turn off the MEMORY button.
Rhythm	The rhythm does not start.	<ul style="list-style-type: none">• The DRUMS volume is set to the minimum level. Use the balance buttons to set the DRUMS volume to an appropriate level.• In the RHYTHM GROUP section, a rhythm in COMPOSER A or COMPOSER B with no stored pattern was selected. Select a different rhythm.• A SEQUENCER track button is on. When you are not playing back the SEQUENCER performance, turn off the track buttons.• CLOCK is set to MIDI. Set CLOCK to INTERNAL. (Refer to page 147.)• The rhythm does not work when the GENERAL MIDI mode is set to ON. Set the GENERAL MIDI mode to OFF. (Refer to page 153.)

Phenomenon		Remedy
SEQUENCER	Storage is not possible.	<ul style="list-style-type: none"> The remaining memory capacity of the SEQUENCER is 0. Follow the SONG CLEAR or TRACK CLEAR procedure to erase the memory. (Refer to pages 82 and 83.)
	Multi-track storage is not possible.	<ul style="list-style-type: none"> The playback track has been selected, but the START/STOP button has not been pressed. A flashing track indicator shows the track which is ready for recording, and a lit track indicator shows a track which is ready for playback. To record one track while listening to another (playback) track, press the START/STOP button to begin playback. (Refer to page 73.)
	The playback measure indication is different from when the performance was recorded.	<ul style="list-style-type: none"> The number of measures corresponds to the time signature of the rhythm selected at the start of recording. To change the rhythm in the middle of the song, record the rhythm change in the RHYTHM part. (Refer to page 78.)
AUTO PLAY CHORD	No sound is produced for the automatic accompaniment.	<ul style="list-style-type: none"> In the RHYTHM GROUP section, a rhythm in COMPOSER A or COMPOSER B with no stored pattern was selected. Select a different rhythm.
	No sound is produced for the automatic accompaniment, or only the sounds of some parts are produced.	<ul style="list-style-type: none"> Some or all of the ACCOMP 1, 2 and 3 buttons are turned off. Press the buttons to turn them on.
COMPOSER	Storage is not possible.	<ul style="list-style-type: none"> The remaining memory capacity of the COMPOSER is 0.
	Setting the time signature and number of measures is not possible.	<ul style="list-style-type: none"> The time signature and number of measures cannot be changed for a pattern which is currently recorded in the COMPOSER. If you wish to change the time signature and/or measure data, first follow the procedure to clear the memory. (Refer to page 97.)
	The playback timing of the rhythm pattern is different from the timing with which it was recorded.	<ul style="list-style-type: none"> The QUANTIZE function was on when the pattern was recorded and the timing was automatically corrected. Set the quantize level to a smaller note unit or to OFF when recording. (Refer to page 99.)
Disk Drive	The Disk Drive produces a noise during recording or playback.	<ul style="list-style-type: none"> This occurs when the Disk Drive is reading a disk. It does not indicate a problem.
	When the procedure to load from a disk is performed, the contents of the keyboard memory are erased.	<ul style="list-style-type: none"> When performing the load operation from a disk, the keyboard memory changes to that of the data loaded from the disk. If you wish to preserve a song which is stored in the keyboard memory, save it on a disk before performing the load procedure. (Refer to page 107.)
Other	Noise from a radio or TV can be heard.	<ul style="list-style-type: none"> This sometimes occurs when electrical equipment such as a radio or TV is used near the instrument. Try moving such electrical equipment further away from the instrument. The sound may be coming from a nearby broadcast station or amateur radio station. If the sound is bothersome, consult your dealer or service center.
	The cabinet becomes warm during use.	<ul style="list-style-type: none"> This instrument has a built-in power source that heats the cabinet to some degree. This is not an indication of trouble.

Error messages

No.	Contents
00	The data on the disk that you are using is for a different product.
01	An error has occurred while the disk was loading. Please try again!
02	There is no disk in the Disk Drive.
03	The file that you tried to load is empty.
05	An error has occurred while the disk was saving. Please try again!
06	The disk that you are using is write protected. Please remove the write protection and try again.
07	The disk that you are using is full. Please use another disk.
08	An error has occurred while the disk was formatting. The disk that you are using may be faulty. Please try formatting another disk.
10	The data is already copy protected.
11	The password that you entered is incorrect.
20	A problem has occurred with your SEQUENCER Data. This might be due to a damaged or faulty disk.
21	Memory full
22	It is necessary to press PUNCH OUT to complete this procedure.
23	It is impossible to change the time signature because it has already been set in the existing tracks.
24	A rhythm track already exists. It is impossible to assign two tracks to rhythm.
25	It is only possible to change the velocity on a melody track.
26	It is only possible to merge melody tracks. Tracks such as rhythm, chord and control cannot be merged.

No.	Contents
27	It is only possible to copy melody tracks. Tracks such as rhythm, chord and control cannot be copied.
28	This song is too long to be saved as a MIDI file.
29	The MIDI file that you have tried to load exceeds the memory capacity of this organ and cannot be played. The SEQUENCER memory has been cleared.
30	It is not possible to change the time signature or measure length of a COMPOSER pattern after it has been recorded. If you want to proceed, you must first clear the entire COMPOSER pattern.
31	The time signature of the pattern from which you are copying is different from the COMPOSER memory that you are using. Either: Change the time signature of the COMPOSER memory or: Copy from a pattern that has the same time signature.
32	Memory full
40	The Identification (ID) code of the system exclusive data received by this organ is for a different product.
41	An error has occurred during system exclusive data reception. The data from the transmitting device may be incomplete. Please try again.
42	An error has occurred during system exclusive transmission. The data has not been received correctly. Please try again.
43	The file that you are trying to load was saved on a previous Technics Organ. It is only possible to load using the "ALL" option.
44	It is impossible to edit a Drum Kit. Please select a different sound from any group except Keyboard Percussion.

Index

ACCOMP	62
AUTO PLAY CHORD	21, 59
BACK GROUND SOUND	52
Backup memory	8, 154
BALANCE	29, 43, 52, 55, 61
BASIC CHANNEL	145
BASS PEDALS	15, 42
BEAT	55
BGS	52
BRILLIANCE	16, 46
CHIFF	37, 39
CHORD STEP RECORD	76
COMPOSER	93-102
MODE SELECT	102
PATTERN COPY	95
RECORD MEMORY-A, B	95
STEP RECORD	100
COMPOSER A, B	54, 94, 100
Connections	155
CONTRAST	32
COPY TO MANUAL	40
COUNT INTRO	19, 56
DEMO	10
DIGITAL EFFECT	16, 44
DIGITAL REVERB	17, 47
Disk Drive	103-110
DISK FORMAT	106
DISK LOAD	105
DISK SAVE	107
LOAD SINGLE COMPOSER PATTERN	109
LOAD SINGLE SOUND MEMORY	110
MIDI FILE LOAD	106
MIDI FILE SAVE	108
Standard MIDI Files	103, 106, 108
Display	29
DISPLAY HOLD	31
DRAWBARS	34, 38
DSP EFFECT	16, 45
DYNAMIC ACCOMP	62
EASY RECORD	23, 69
EFFECT	16, 44
ELECTRONIC TABS	34, 37
ENDING	20, 57
Error messages	160
EXIT	31
Expression pedal	9
Feet marks	37
FILL IN	20, 57
FINGERED	60
Floppy disk. <i>See</i> DISK DRIVE	
Full bass pedal	44
Glide	47
HELP	32
INITIAL TOUCH SENSITIVITY	124
Initialize	154
INTRO & ENDING	19, 56
KEYBOARD PERCUSSION	58
Knee lever	47

LOWER ORCHESTRAL CONDUCTOR. <i>See</i> ORCHESTRAL CONDUCTOR	
LOWER SOUND GROUP. <i>See</i> SOUND GROUP	
MAIN VOLUME	9
MANUAL	36
MEM & CTRL	123
MEMORY A, B	41
MENU	30
MIDI	142-153
COMMON SETTING & PANEL MEMORY	
OUTPUT	148
CONTROL MESSAGE	146
GENERAL MIDI	143, 153
INPUT SETTING	152
MIDI PRESETS	151
OUTPUT SETTING	152
REALTIME MESSAGE	147
SYSTEM EXCLUSIVE BULK DUMP	153
MIDI button	144
Music stand	8
MUSIC STYLE ARRANGER	28, 65
MUSIC STYLE SELECT	27, 64
ONE FINGER	22, 59
ONE TOUCH ORGAN	25, 48
ONE TOUCH PLAY	27, 63
ORCHESTRAL CONDUCTOR	33
ORGAN	13, 34
ORGAN STYLIST	26, 49
ORGAN TYPE. <i>See</i> U/L ORGAN TYPE	
OUTPUT SETTING	127
Panel light	8
PANEL MEMORY	53
PERC	37
PIANIST	60
PIPE ORGAN	35, 39
POWER	9
POWER ON MODE	126
PRESET	40
PROGRAM SECTION	6, 30
RHYTHM GROUP	18, 54
RHYTHM STEP RECORD	78
SEQUENCER	67-92
AFTER TOUCH SETTING	81
EXPRESSION SETTING	80
MEASURE COPY	86
MEASURE DELETE	87
MEASURE ERASE	85
MEASURE INSERT	87
MEDLEY	92
Multi-track recording	73
PLAY	91
Playback	73
PUNCH RECORD	89
QUANTIZE	84
SONG CLEAR	82
TRACK ASSIGN	79
TRACK CLEAR	83
TRACK MERGE	83

VELOCITY CHANGE	88
SEQUENCER button	68, 80-82
SEQUENCER parts	70
SEQUENCER REC	68, 72
SEQUENCER RESET	70
SOUND	111-122
DSP EFFECT	120
GLIDE SETTING	120
MASTER TUNING	119
ORGAN EFFECT	122
PART SETTING	113
REVERB SETTING	117
TECHNI-CHORD TYPE	119
TREMOLO	118
SOUND button	111
SOUND EDIT	128-141
AFTER TOUCH	134
AUTO BEND & TRILL	132
CONTROLLERS	134
DISTORTION	133
EASY EDIT	130
EFFECT EDIT	139
ENVELOPE	137
ENVELOPE KEY FOLLOW	137
FILTER	138
GENERAL EDIT	131
LEVEL	136
MEMORY A, B	141
MODULATION	133
OCTAVE SHIFT	131
TONE	136
TONE EDIT	135
VIBRATO	132
WRITE	140
SOUND GROUP	14, 41
Specifications	163
START/STOP	18, 55
STEP REC	68, 74
SUSTAIN	36, 45
SWITCH ASSIGN	125
SYNCHRO & BREAK	55, 62
Tab buttons	36
TECHNI-CHORD	51
TEMPO/PROGRAM	19, 32, 55
TO LOWER	44
TOUCH	123
TOUCH SENSE PART SETTING	125
TRANPOSE	50
TREMOLO	17, 35
TREMOLO SLOW/FAST	35
Troubleshooting	158
U/L ORGAN TYPE	13, 34
UPPER ORCHESTRAL CONDUCTOR. <i>See</i>	
ORCHESTRAL CONDUCTOR	
UPPER SOUND GROUP. <i>See</i> SOUND GROUP	
VARIATION	19, 56
Volume. <i>See</i> BALANCE	
Volume balance	29

Specifications

		SX-F100	
KEYBOARD	UPPER	61 KEYS	
	LOWER	61 KEYS	
	PEDAL	25 KEYS, FULL BASS PEDAL	
SOUND GENERATOR		PCM	
MAXIMUM NUMBER OF NOTES PRODUCED SIMULTANEOUSLY	ORGAN PART	64 NOTES	
	ALL OTHER PARTS	64 NOTES	
SOUNDS	ORCHESTRAL CONDUCTOR (UPPER, LOWER)		ORGAN, SOUND 1, SOUND 2, SOUND 3
	SOUND GROUP (UPPER, LOWER)		200 SOUNDS GROUPS: PIANO, E PIANO/HARPSI, GUITAR, STRINGS/VOCAL, BRASS, FLUTE, MALLET, SPECIAL PERC, REED, SAX/CLARINET, SYNTH BRASS/LEAD, SYNTH PAD
	ORGAN	TYPE	10 TYPES GROUPS: ELECTRONIC TABS, DRAWBARS, PIPE ORGAN
		TAB	<UPPER> 16', 5-1/3', 8', 4', 2-2/3', 2', 1-3/5', 1-1/3', 1', 4' PERC, 2-2/3' PERC <LOWER> 16', 5-1/3', 8', 4', 2-2/3', 2', 1-3/5', 1-1/3', 1'
	BASS PEDALS		63 SOUNDS
			GROUPS: ORGAN, CLASSICAL ORGAN, STANDARD, ORCHESTRAL, CONTEMPORARY
EFFECTS	TREMOLLO		UPPER/LOWER ORGAN (SLOW/FAST)
	EFFECT		UPPER/LOWER ORGAN
	SUSTAIN		UPPER/LOWER ORGAN, UPPER/LOWER SOUND GROUP, BASS PEDALS
	DIGITAL EFFECT		UPPER/LOWER SOUND GROUP, BASS PEDALS
	DSP EFFECT		UPPER/LOWER SOUND GROUP
	BRILLIANCE		UPPER/LOWER SOUND GROUP, BASS PEDALS
	DIGITAL REVERB		○
TRANSCOPE		G-C-F'	
RHYTHM		140 RHYTHMS GROUPS: BIG BAND/SWING, COUNTRY, MARCH/WALTZ, U.S. TRAD, SHOW TIME, ORGAN/NOVELTY, STANDARD LATIN, BALLAD/POP, TRAD DANCE, MODERN DANCE, JAZZ COMBO, PARTY/WORLD, ROCK/BLUES, POP LATIN	
CONTROLS		MAIN VOLUME, BALANCE, U/L ORGAN TYPE, START/STOP, INTRO & ENDING, FILL IN 1, 2, VARIATION, COUNT INTRO, SYNCHRO & BREAK, TEMPO/PROGRAM	
KEYBOARD PERCUSSION		○	
BACKGROUND SOUND		BIRD, WAVE, RAIN, CHURCH BELL, APPLAUSE	
AUTO PLAY CHORD		ONE FINGER, FINGERED, PIANIST, MEMORY, DYNAMIC ACCOMP	
EASY PLAY STYLE		ONE TOUCH ORGAN, ORGAN STYLIST, ONE TOUCH PLAY/MUSIC STYLE SELECT, MUSIC STYLE ARRANGER	
TECHNI-CHORD		○	
PANEL MEMORY		SET, 1-16	
SEQUENCER		16 TRACKS STORAGE CAPACITY: APPROX. 28,000 NOTES INPUT MODES: EASY RECORD, REALTIME RECORD, STEP RECORD FUNCTIONS: PUNCH RECORD, TRACK ASSIGN, EXPRESSION SETTING, AFTER TOUCH SETTING, EDIT (SONG CLEAR, TRACK CLEAR, TRACK MERGE, QUANTIZE, MEASURE ERASE, MEASURE COPY, MEASURE DELETE, MEASURE INSERT, VELOCITY CHANGE), PLAY, MEDLEY	
COMPOSER		5 PARTS: ACCOMP 1, 2, 3, BASS, DRUMS STORAGE CAPACITY: APPROX. 8600 NOTES INPUT MODES: REALTIME RECORD, STEP RECORD FUNCTIONS: MODE SELECT, PATTERN COPY, LOAD SINGLE COMPOSER PATTERN MEMORY: 2 BANKS x 6	
DISK DRIVE		3.5 inch DISK DRIVE FOR 2HD, 2DD FUNCTIONS: DISK SAVE, DISK LOAD, MIDI FILE SAVE, MIDI FILE LOAD, DISK FORMAT, LOAD SINGLE COMPOSER PATTERN, LOAD SINGLE SOUND MEMORY	
SOUND		PART SETTING (PAN, SUSTAIN, REVERB, DSP EFFECT, BRILLIANCE, VOLUME, KEY SHIFT, TUNING, BEND RANGE, ASSIGN MODE), TECHNI-CHORD TYPE, TREMOLLO SPEED, MASTER TUNING, REVERB SETTING, GLIDE SETTING	
MEMORY & CONTROL		INITIAL, SWITCH ASSIGN, POWER ON MODE, PANEL MEMORY MODE, MUSIC STYLE ARRANGER MODE, OUTPUT SETTING	

	SX-F100
SOUND EDIT	EASY EDIT, GENERAL EDIT (OCTAVE SHIFT, VIBRATO, AUTOBEND & TRILL, MODULATION, DISTORTION, GLIDE, SUSTAIN MODE, AFTER TOUCH) TONE EDIT (TONE LEVEL, ENVELOPE, ENVELOPE KEY FOLLOW, FILTER), EFFECT EDIT MEMORY: 2 BANKS x 18 (UPPER/LOWER) 1 BANK x 16 (BASS)
MIDI	MIDI PRESET, BASIC CHANNEL, CONTROL MESSAGE, REALTIME MESSAGE, COMMON SETTING & PANEL MEMORY OUTPUT, OCTAVE SHIFT & LOCAL ON/OFF, INPUT SETTING, OUTPUT SETTING, SYSEX BULK DUMP, GENERAL MIDI
DISPLAY	LCD (320 x 240 DOTS) CONTRAST, EXIT, DISPLAY HOLD
HELP	○
DEMO	○
LIGHT	○
TERMINALS	PHONES 1, 2, SEPARATED LINE OUT (ORGAN, BASS DRUMS), LINE OUT (R/R+L, L), AUX IN (R/R+L, L), MIDI (IN, OUT, THRU), MIC
•OUTPUT	320 W
SPEAKERS	30 cm x 2, 16 cm x 2, 6.5 cm x 2, MONITOR (13 cm x 6 cm) x 2
POWER REQUIREMENT	490 W AC120 V 60 Hz
DIMENSIONS (WxHxD)	126.2 cm x 137 cm x 74.1 cm (49-11/16" x 53-15/16" x 29-3/16")
NET WEIGHT WITHOUT BENCH	BODY: 132 kg (291 lbs.) PEDAL KEYBOARD: 26 kg (57.3 lbs.)

Design and specifications are subject to change without notice.

